Introduction to

Total

Quality

Leadership

Course Overview

Course Mission Statement and Objectives

To provide the student with an awareness of Total Quality Leadership principles and techniques

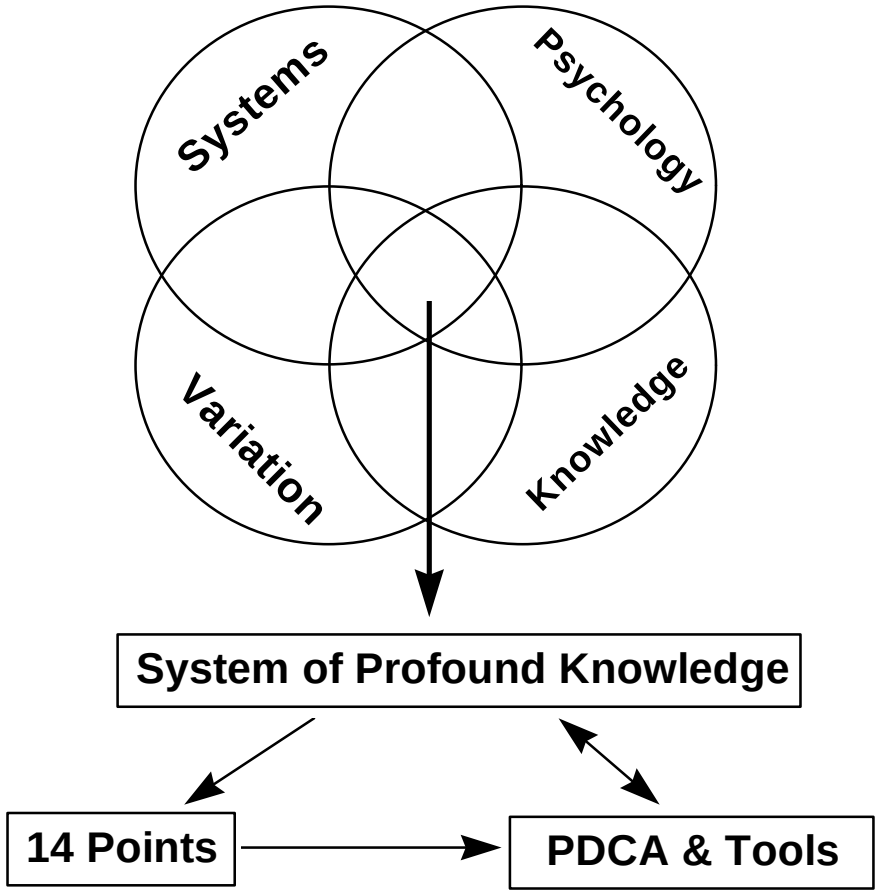
By the end of this course the student will have a basic awareness of the following:

- **The DON Quality Approach**
- **The Quality Improvement Teams**
- **The System of Profound Knowledge**
- **The Fourteen Obligations of Management**
- **Basic Process Improvement Tools**

Course Structure and Schedule

- Module 1 - DON Quality Approach - 2 Hrs
- Module 2 - Quality Improvement Teams - 1 Hr
- Module 3 - System of Profound Knowledge - 2 Hrs
- Module 4 - The Fourteen Points - 1 Hr
- Module 5 - Basic Process Improvement Tools - 2 Hrs

DON Approach to Quality Management



Introduction to

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Module 1
DON Quality Approach

Definition of Quality

qual.i.ty (kwal e ti), n.

Websters Dictionary:

- **Peculiar or essential character**
- **An inherent feature or property**
- **A distinguishing attribute or characteristic**
- **The degree of excellence which a thing possesses**

DON Definition:

- **The extent to which a product or service meets or exceeds customer requirements and expectations**

Dimensions of Quality

- Performance
- Timeliness
- Reliability
- Durability
- Aesthetics
- Personal interface
- Reputation
- Ease of use
- Features
- Consistency
- Uniformity
- Accuracy
- Conformance to specifications
- _____

Quality Depends On:

- The context in which it is used
- The customer's perception
- The needs and wants of the customer

What is a Process?

- A series of operations or steps that results in a product or service
- A set of causes and conditions that work together to transform inputs into an output

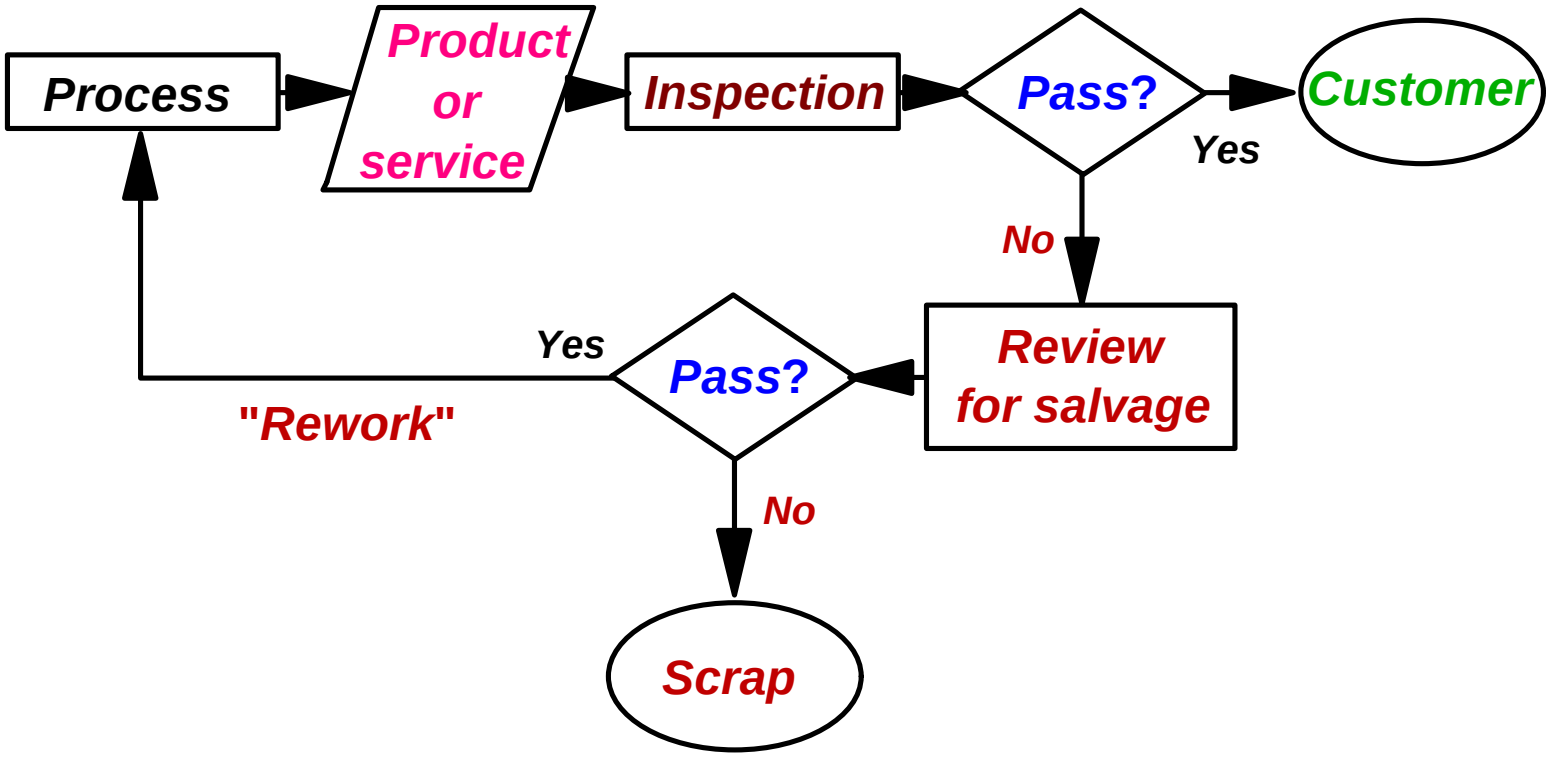
Examples of Processes

- Loading ordnance
- Dropping anchor
- Arranging travel
- Preparing a report
- Processing payments
- Admitting patients
- Starting propulsion equipment
- Purchasing supplies
- Plating metal
- Training people
- Preparing a budget
- Transporting hazardous materials
- _____

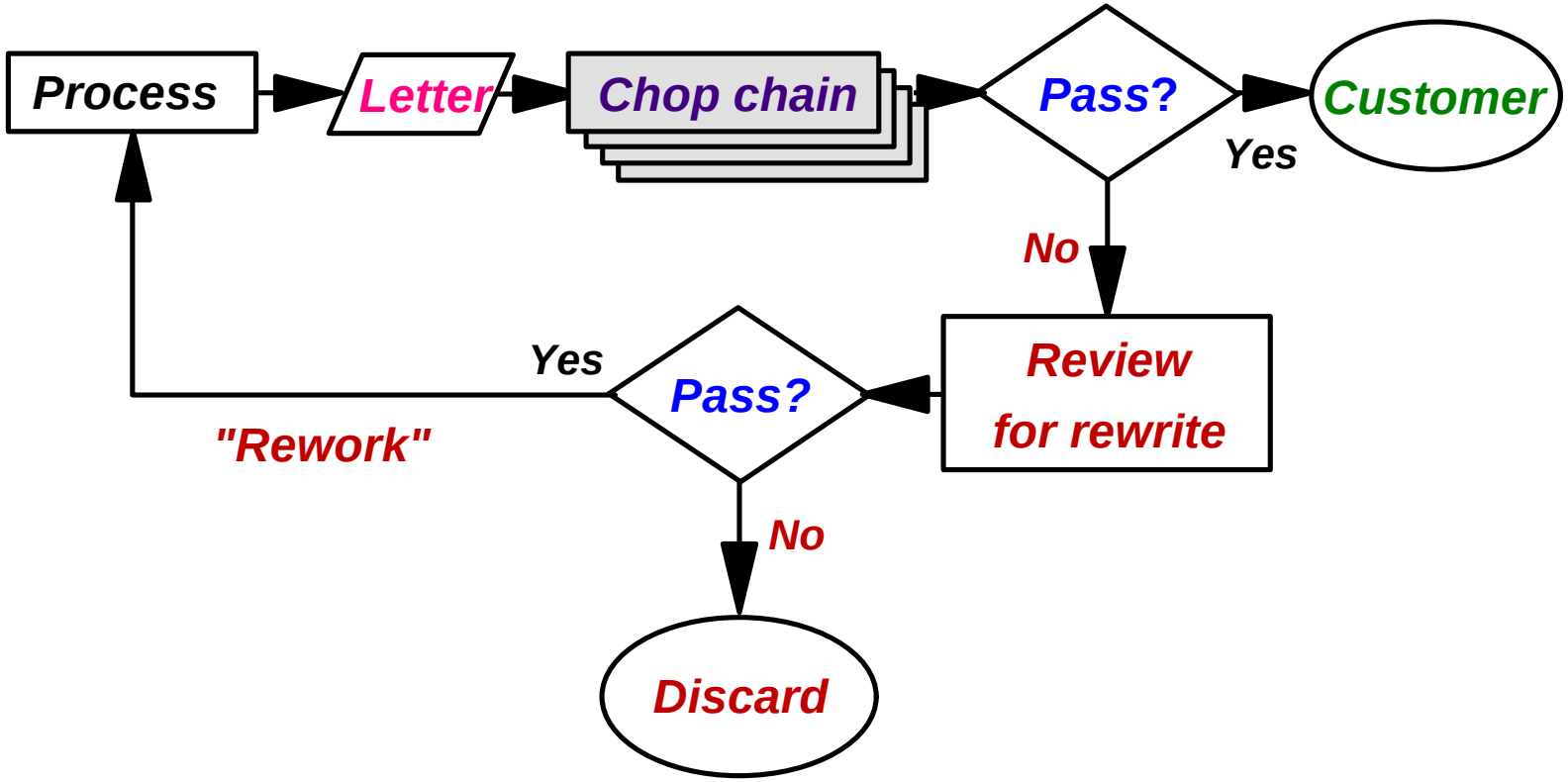
Two Approaches to Quality

- **Quality through Inspection**
  - To detect and remove poor quality
- **Quality through Process Improvement**
  - To build in quality

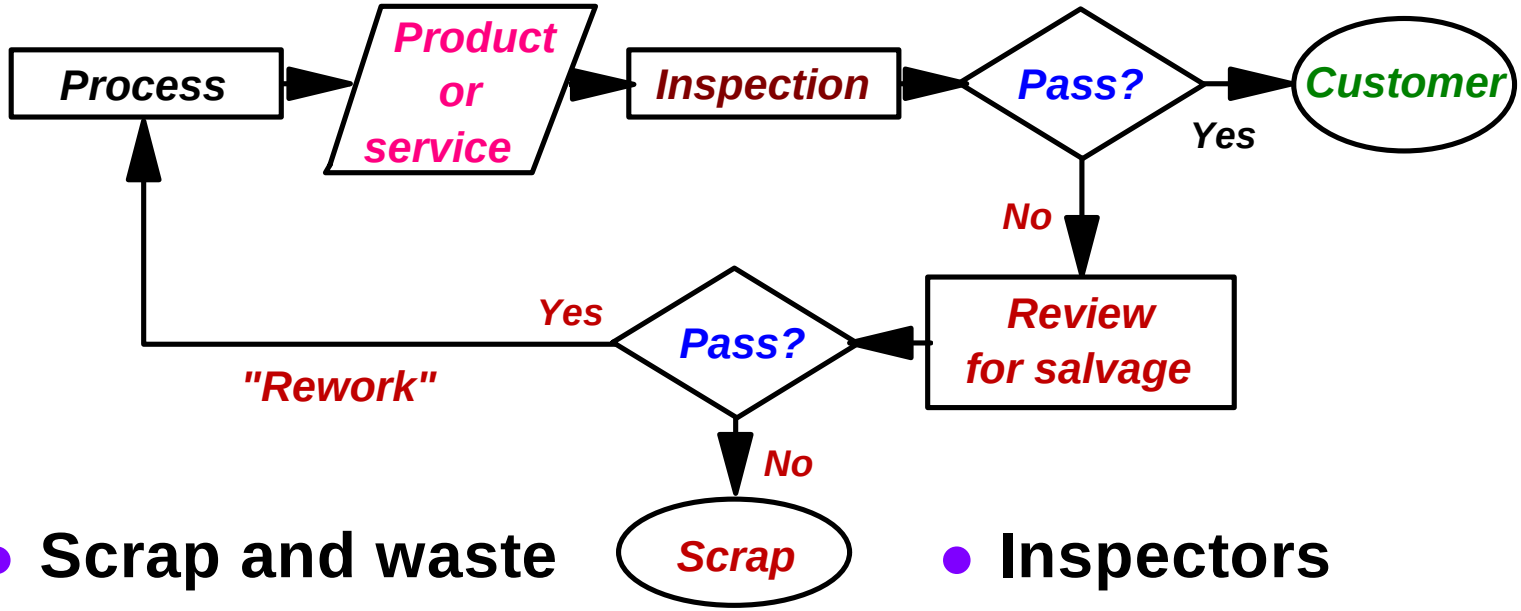
Quality through Inspection



Inspection Example



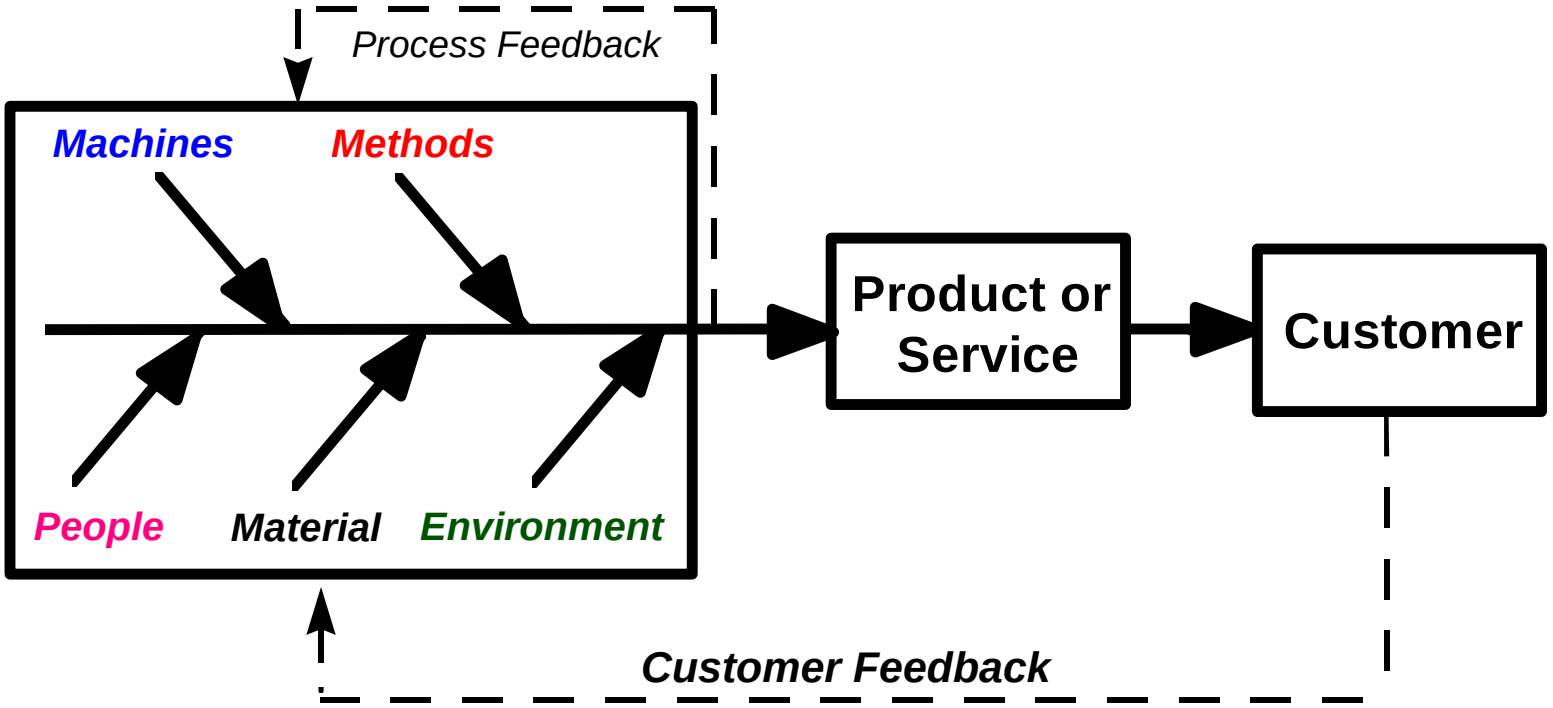
Costs of Inspection



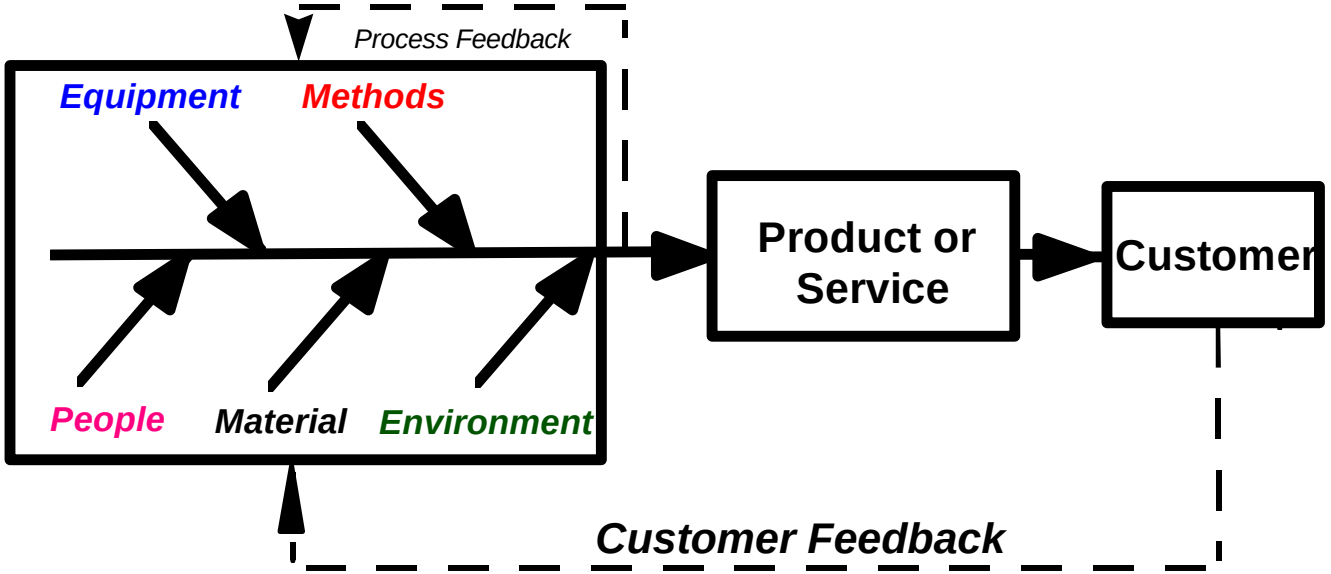
- Scrap and waste
- New material
- Time
- Delay

- Inspectors
- Employee burnout
- “Unknowable” costs

Quality through Process Improvement

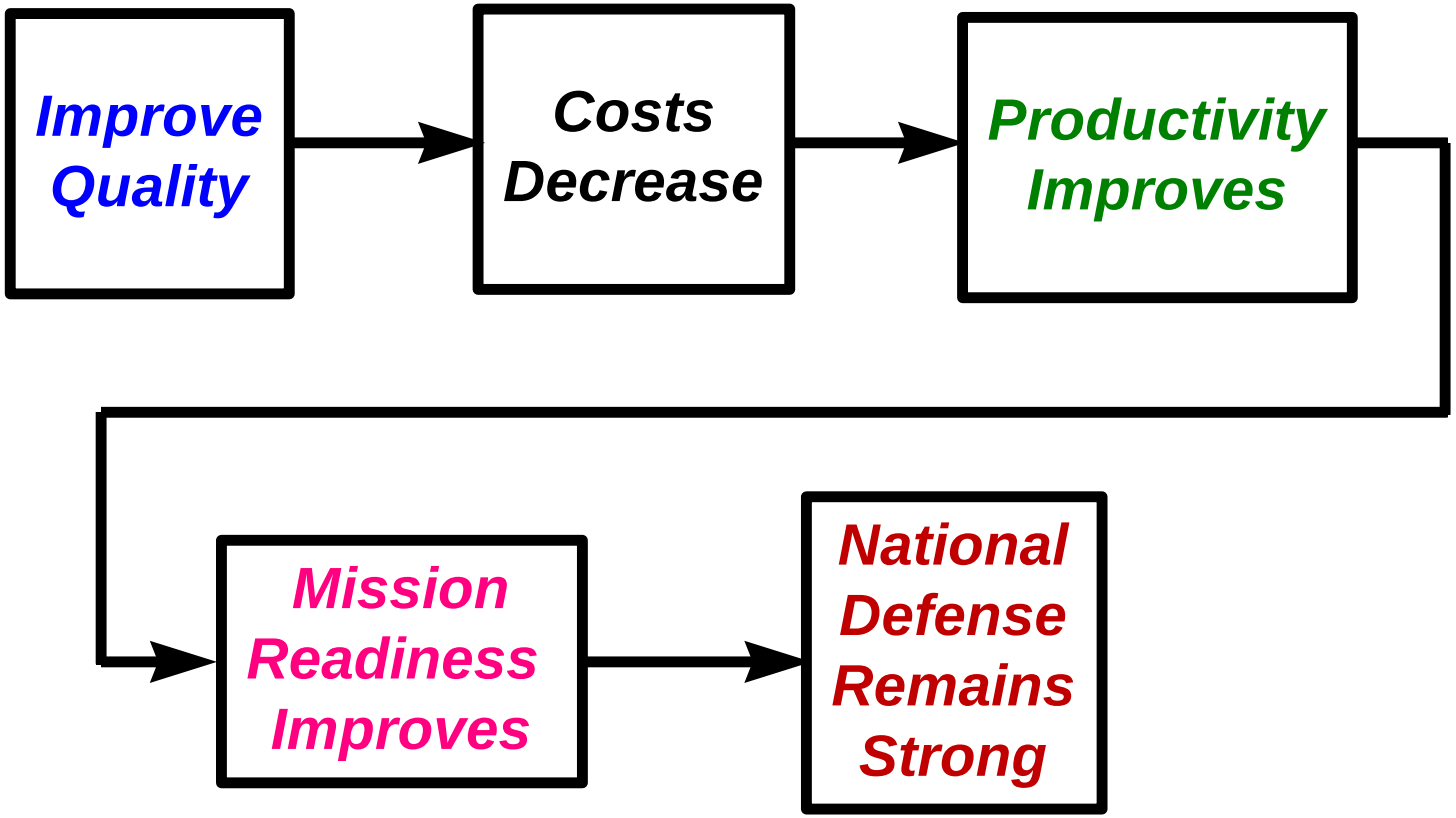


Investments in Process Improvement



- *Education and training*
- *Measurement and analysis*
- *Improving processes and systems*
- *Investment in innovation*

The Chain Reaction in the DON



(CNO TQL Teams, 1991)

Why Focus on Quality?

- The DON needs to maintain mission readiness
- There is a new direction for the DON
- The aim should be distinction in service
- TQL can help the DON meet the goals of the National Performance Review
- The U.S. needs to continue to improve its competitiveness in the world marketplace

Benefits of Focusing on Quality

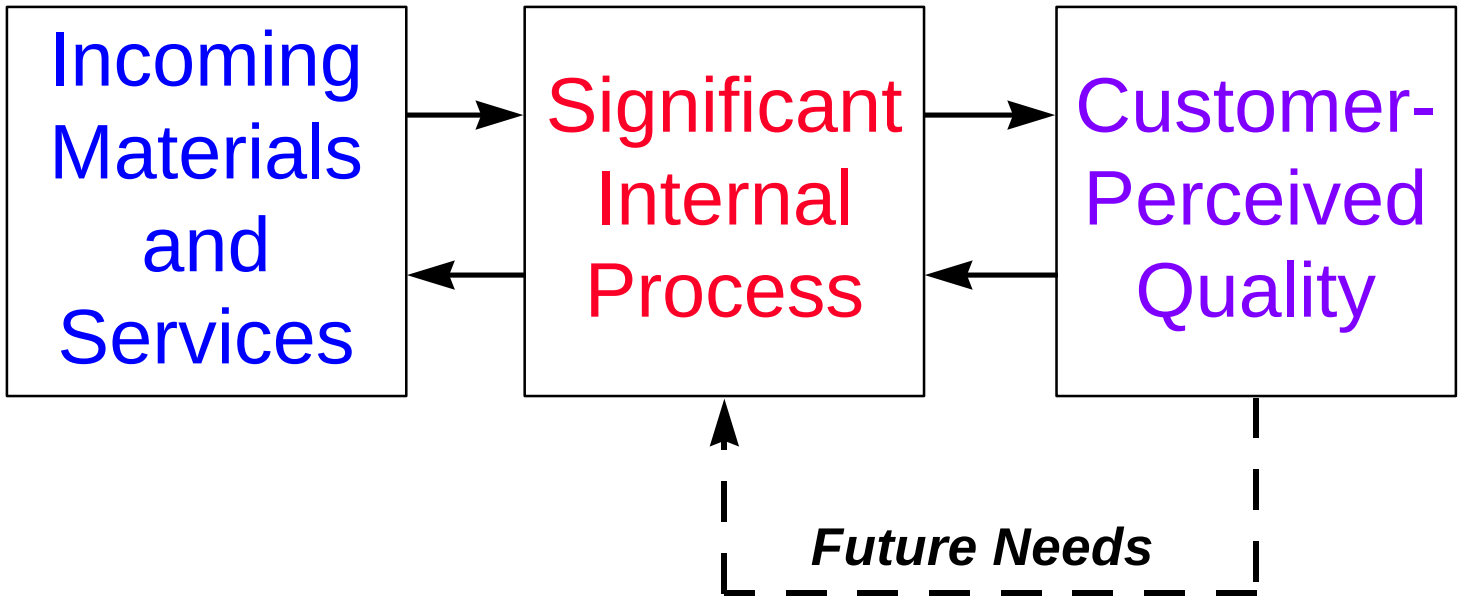
- Improves operational readiness of our armed forces
- Improves organizational efficiency and effectiveness
- Eliminates waste, reduces costs, and increases productivity
- Enables everyone to make meaningful contributions to their work

DON Definition of Total Quality Leadership (TQL)

The application of quantitative methods and the knowledge of people to assess and improve:

- **Materials and services supplied to the organization**
- **All significant processes within the organization and**
- **Meeting the needs of the end-user, now and in the future**

Total Quality Leadership Model




Video...
"TQL Welcome Aboard"
or
"TQL: A Marine Experience"

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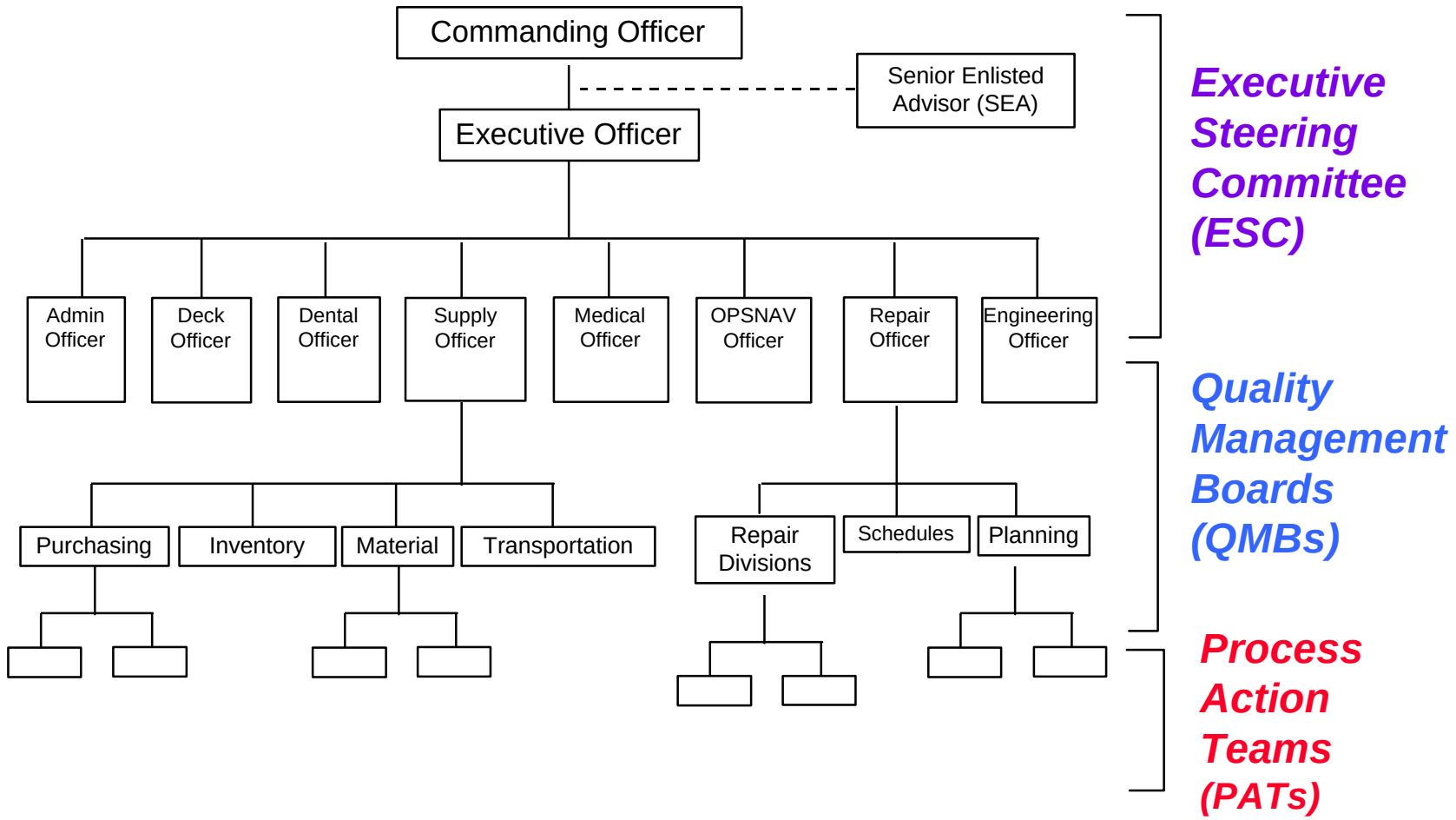
Module 2

Quality Improvement Teams

Quality Improvement Team Structure



Team Approach to Managing Quality

- Complements the chain of command
- Focuses on significant processes
- Builds upon joint ownership of the process
- Facilitates vertical alignment and horizontal integration
- Is customer driven

Executive Steering Committee (ESC)

A team made up of top leaders in the command

- **Establishes the practice of process management**
- **Participates in process improvements activities**
- **Establishes teams for process improvement**
- **Provides TQL support and resources**
- **Manages the transformation in the command**
- **Establishes conditions for beginning strategic management**

Quality Management Board (QMB)

A cross-functional team of process owners

- **Describes the significant process**
- **Simplifies and standardizes the process**
- **Stabilizes the process and checks for capability**
- **Begins continual process improvement**
- **Coordinates cross-functional efforts**
- **Charters Process Action Teams as required**

Process Action Team (PAT)

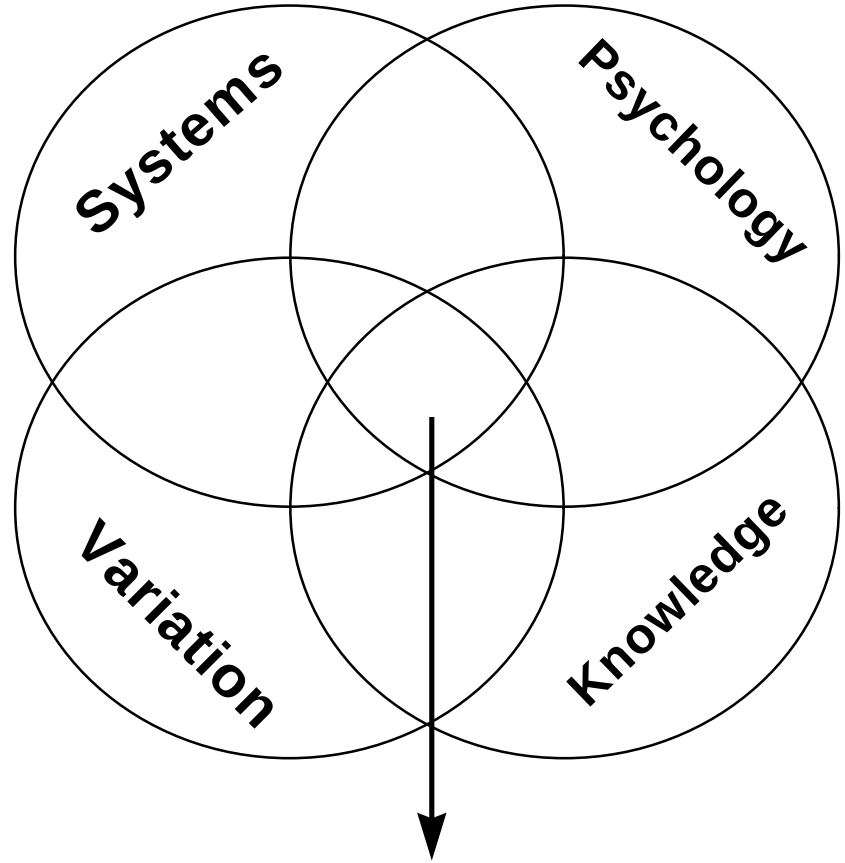
Composed of individuals working within a stage of the process

- **Helps the QMB establish process stability**
- **Measures processes and collects data**
- **Makes recommendations for improving the process**
- **Documents process analysis and action**

Introduction to

Total Quality Leadership

Module 3
System of Profound Knowledge

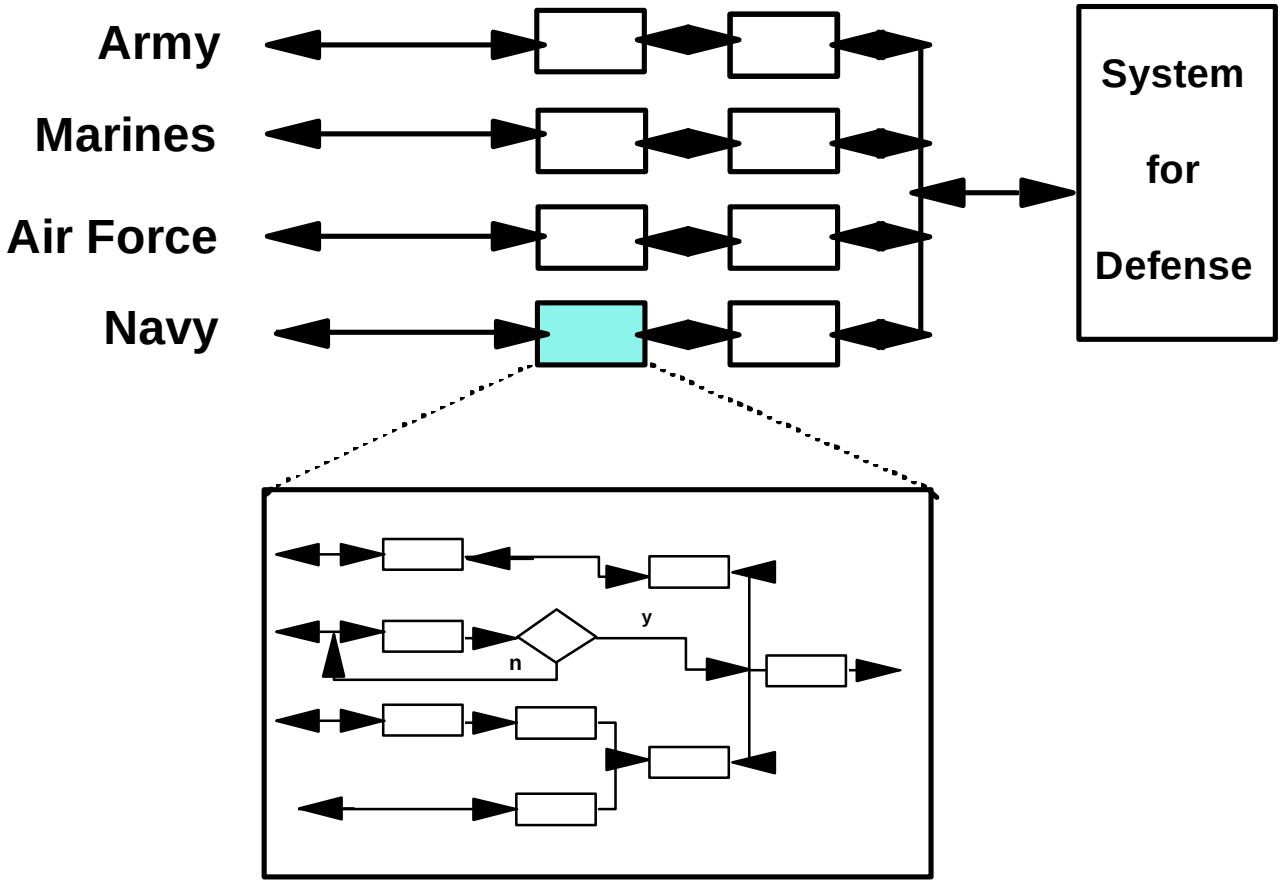


System of Profound Knowledge

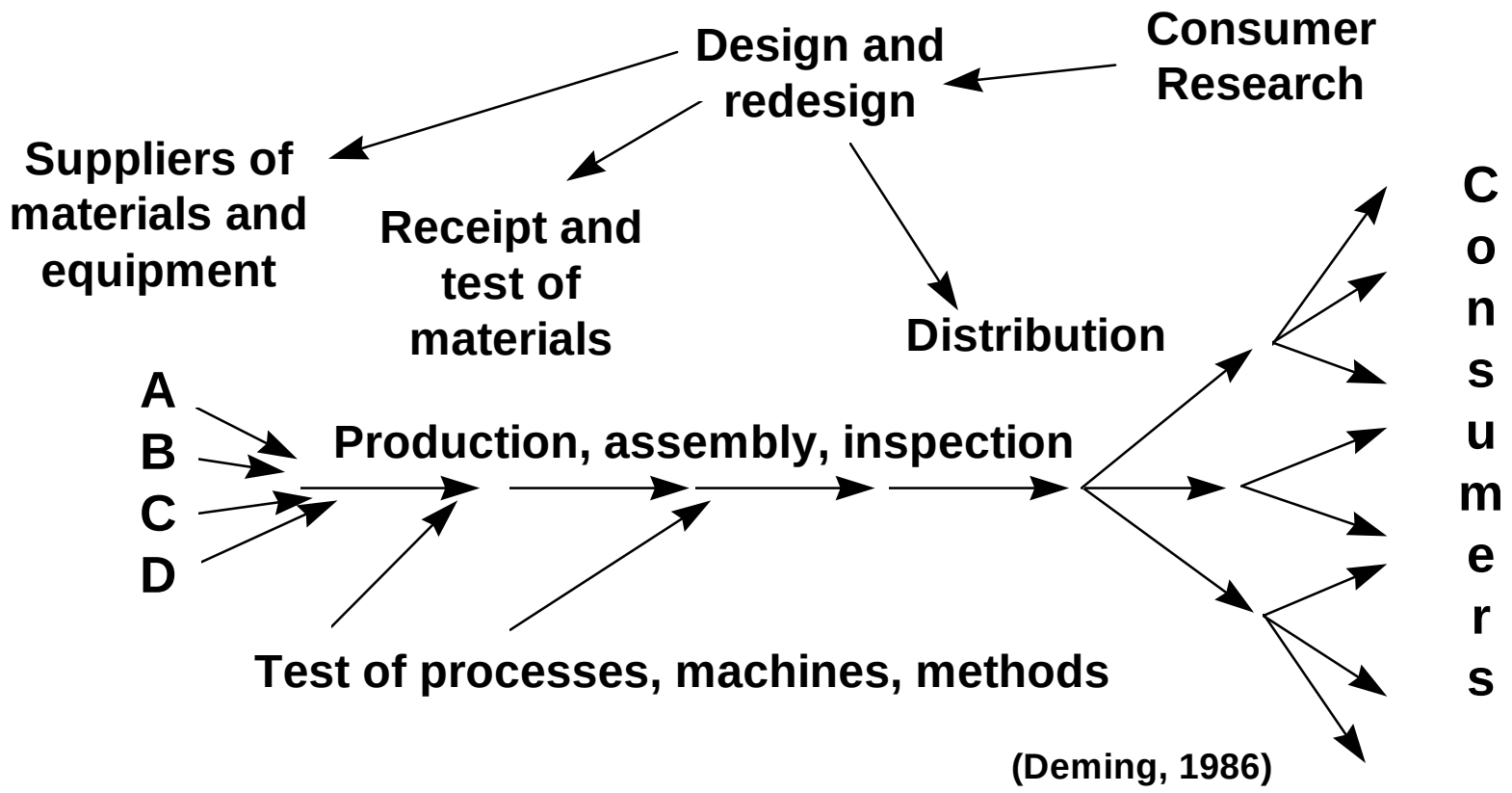
What is a System?

- Collection of interacting parts functioning as a whole
- Collection of subsystems that support the larger system
- Collection of processes oriented toward a common goal
- The organization as a system

Systems and Subsystems

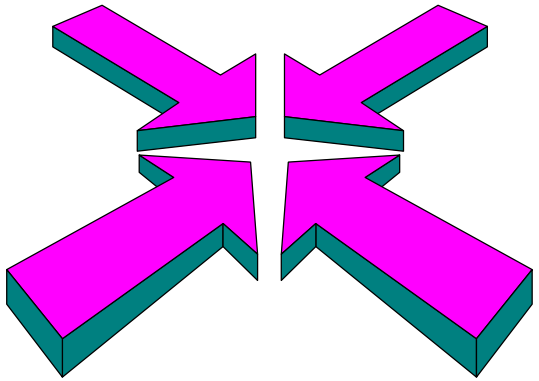


Organization as an Extended System



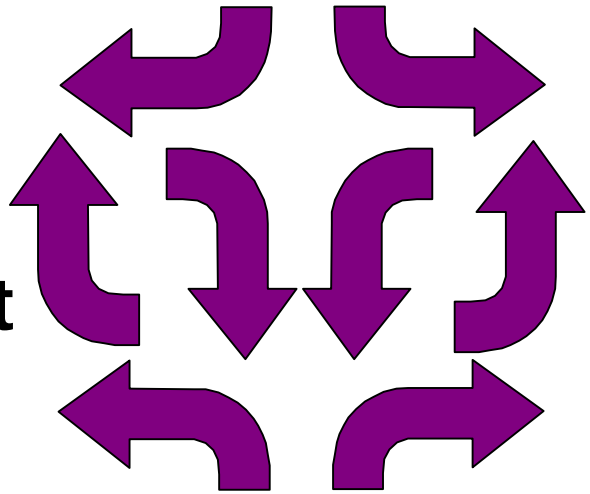
Optimization of the Organization

- Occurs when the aims of the subsystems or parts support the aims of the organization
- May result in a delayed effect
- Must be managed

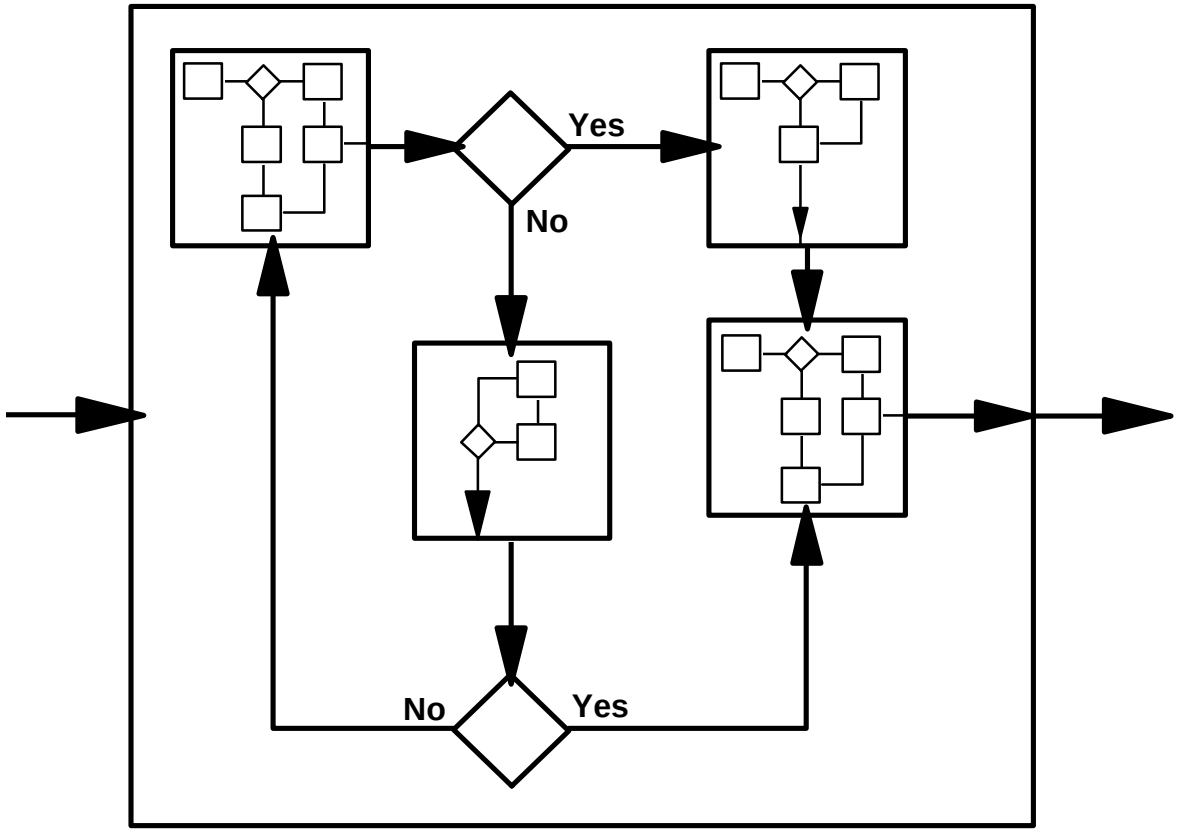


Suboptimization of the Organization

- Occurs when the aims of the subsystems or parts do not support the aims of the organization
- Occurs when management fails to lead the organization as a system



The Organization as a System, Subsystems, and Processes

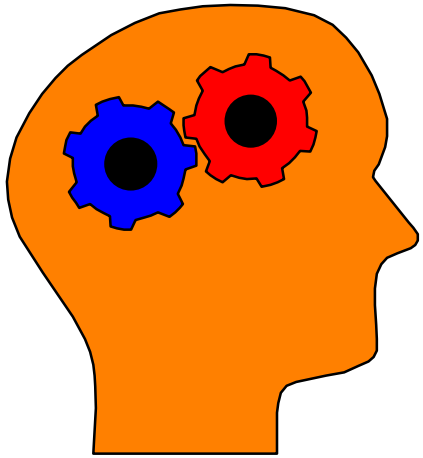


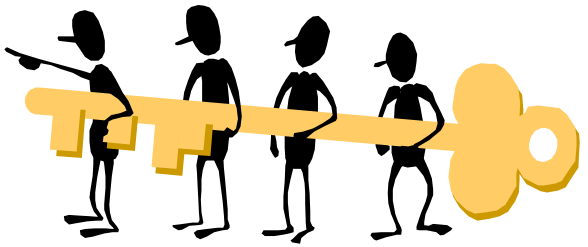
Understanding Similarities of People

- Need to be part of a group
- Need to be respected by others
- Need to avoid punishment
- Natural inclination to learn
- Desire to do well

Understanding Differences of People

- **Learning styles**
  - Concrete Experience
  - Reflective Observation
  - Abstract Conceptualization
  - Active Experimentation
- **Levels of ability**
- **Ability to work in teams**
- **Readiness for change**





Changing Organizational Culture

- **Definition of culture:**

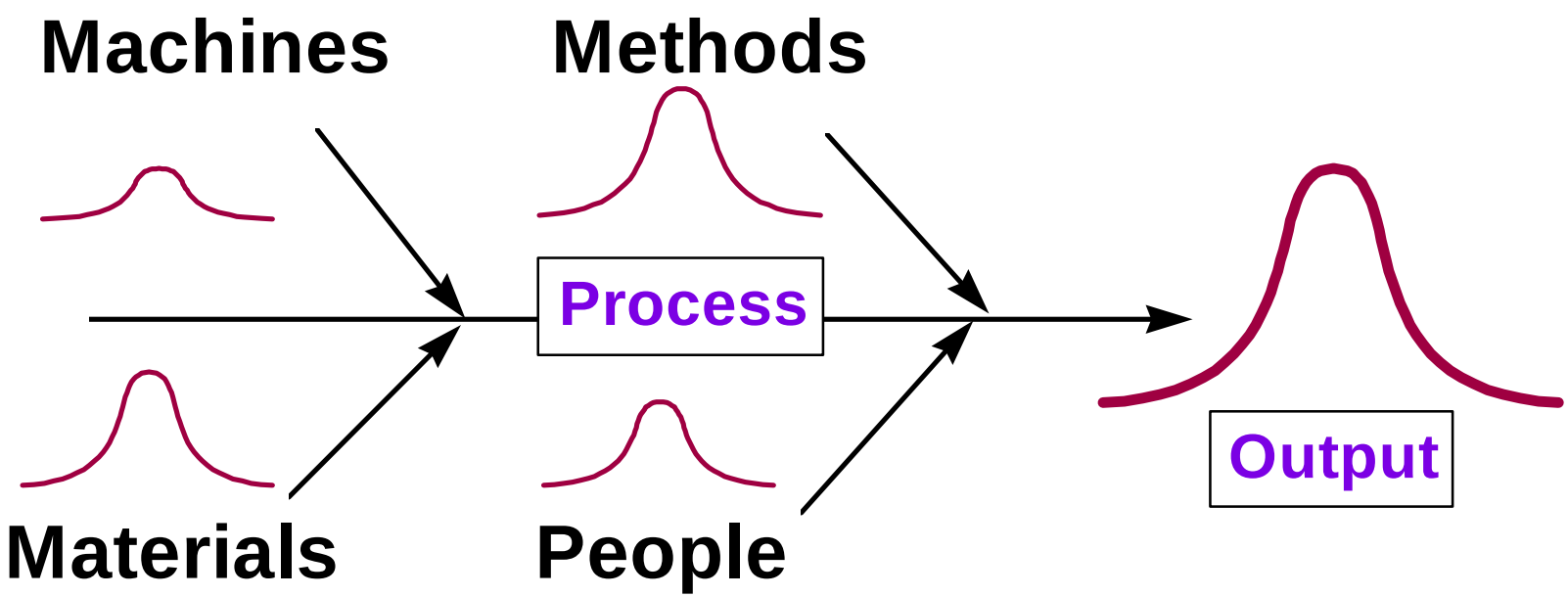
"The pattern of assumptions in the organization that has been useful in coping with the internal and external environment, which is taught to new members as the 'correct' way to perceive, think, and feel about their work." **(Schein 1990)**

- **Cultural changes that will be required**

Working in Teams

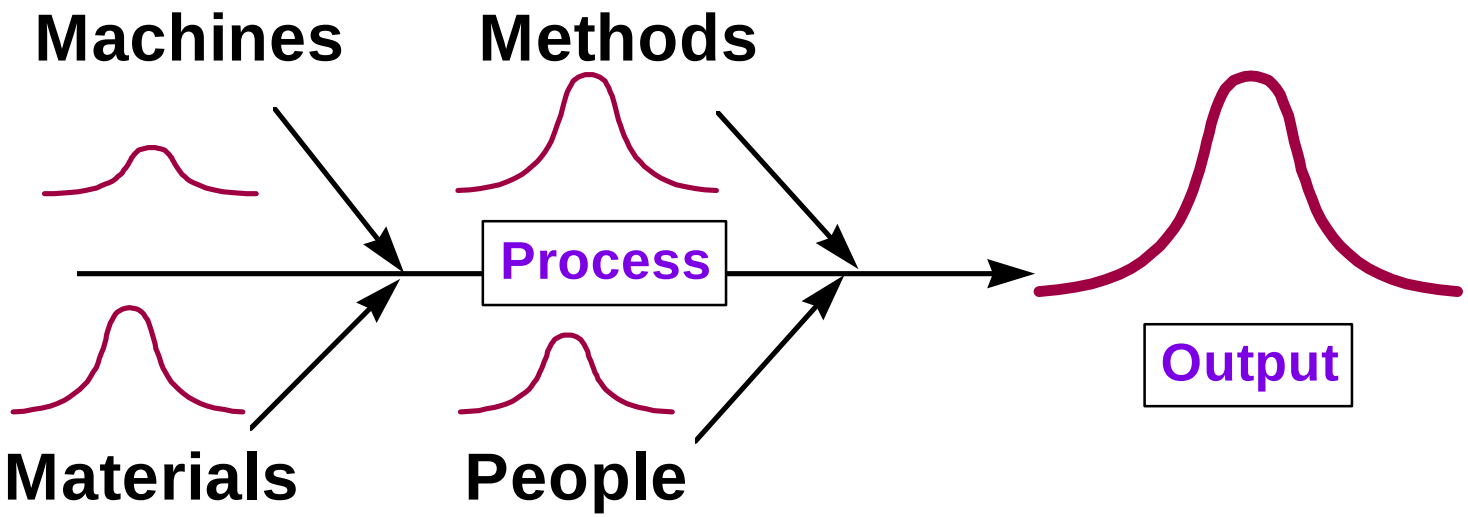
- Fulfills the need to be part of a group
- Facilitates problem-solving and process improvement
  - Synergy, expertise, accessibility to information
- Fosters a sense of ownership
- Improves work motivation and performance
- Helps avoid suboptimization

Why Variation Occurs



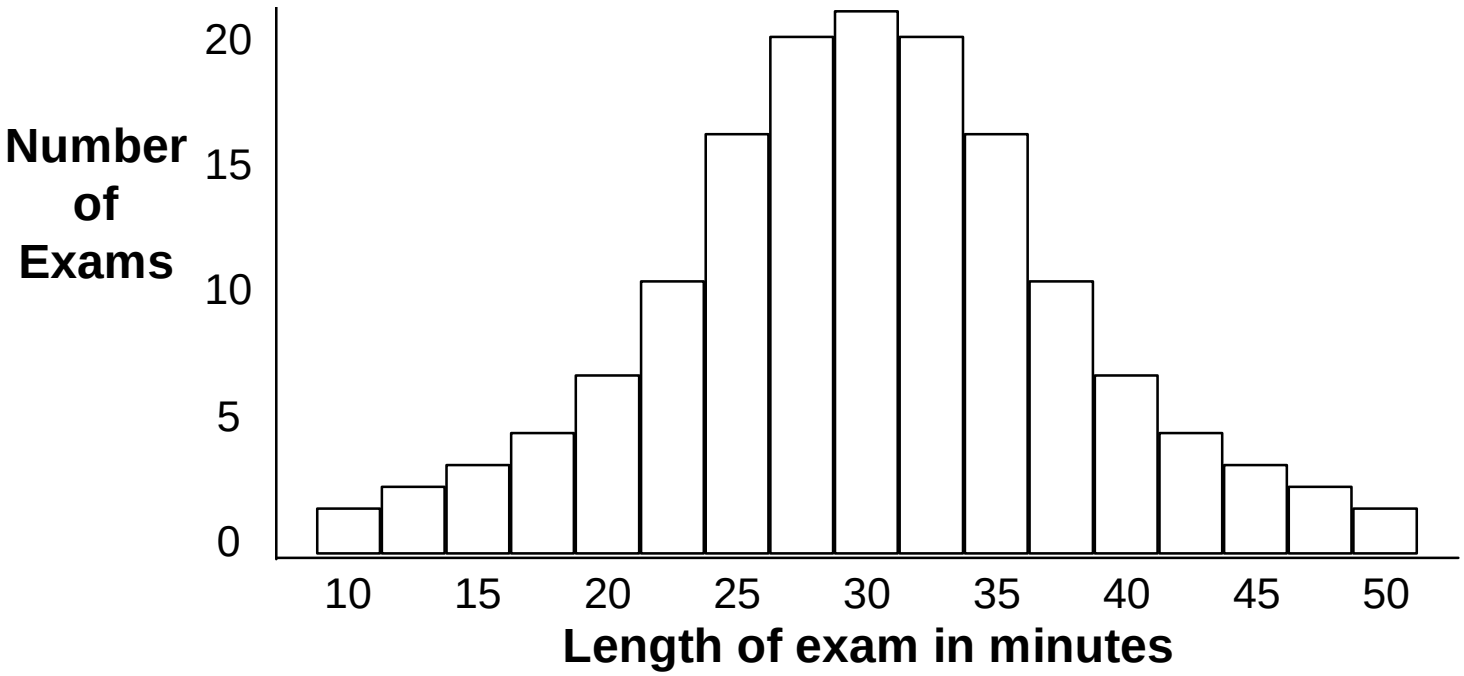
- Variation in the process leads to variation in the output

Shewhart's Discovery



- Variation is inherent in all processes
- Process causes can be identified, measured, and analyzed
- Deliberate action is required to reduce variation

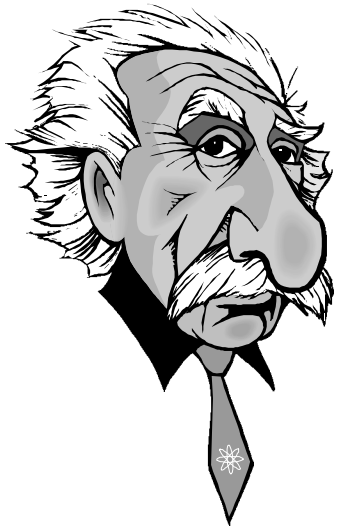
Understanding Variation

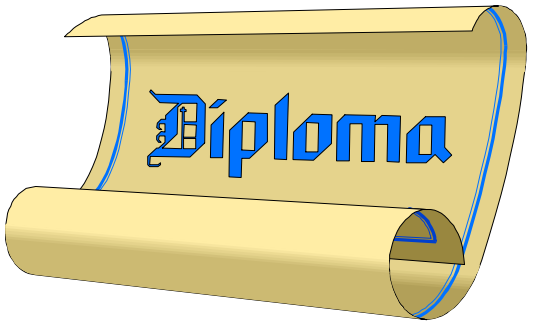


- Distribution of measures from the health exam process

Theory of Knowledge

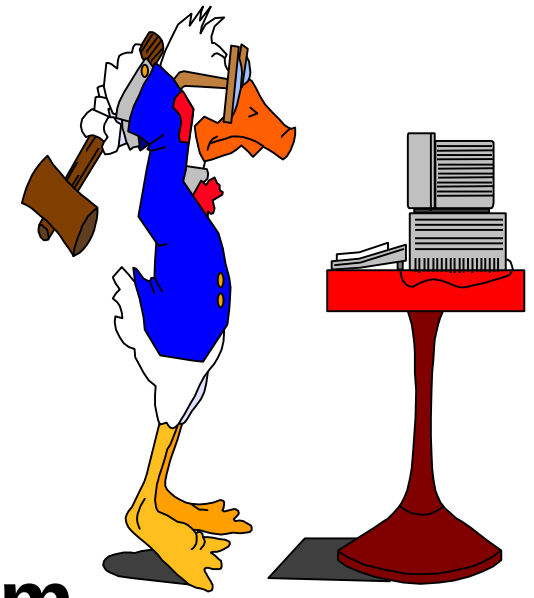
- **Systematic approach to learning**
- **Knowledge is the only source of improvement and innovation**





Typical Approaches to Planning and Decision-Making

- React to problems
- “Shoot from the hip”
- Form “tiger teams”
- Blame the workers
- Work around the system
- Take a short-term perspective



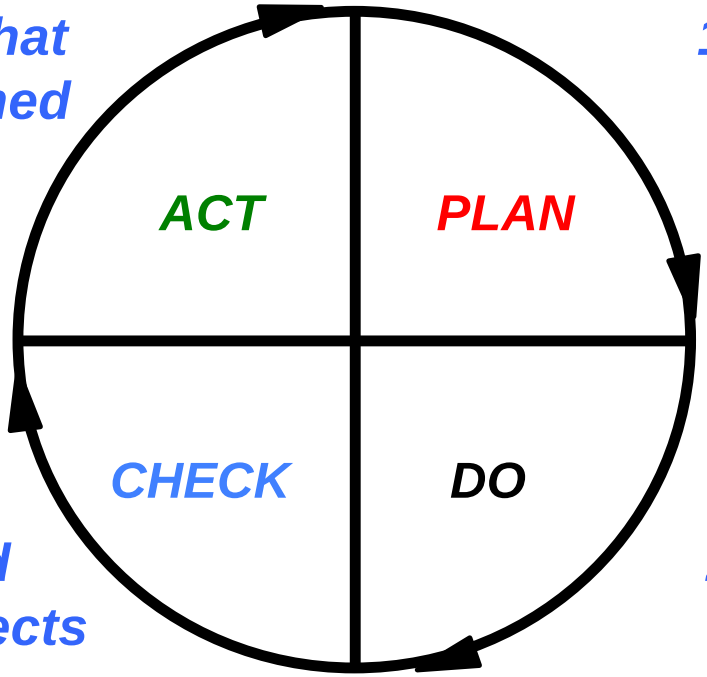
Quality Approaches to Planning and Decision-Making

- Plan for improvements
- Make data-based decisions
- Pursue continuous process improvement
- Improve processes
- Improve the organizational system
- Take a long-term perspective

The Plan-Do-Check-Act (PDCA) Cycle

4. Act on what was learned

1. Plan a change for improvement



3. Analyze and interpret effects of the change

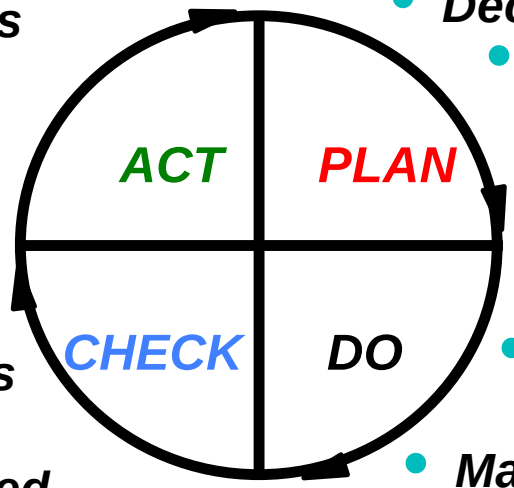
2. Carry out the change on a small scale

5. Repeat step 1 with new knowledge

6. Repeat step 2 and onward

PDCA Cycle and Process Improvement

- Identify what is to be improved
- Plan what changes might lead to improvements
  - Decide what data are needed
    - Determine how, when, and by whom data will be collected



- Gather or review baseline data
- Make planned changes on a small scale
- Gather data to determine what happened after the changes

- Compare results of changes with what was planned
- Determine whether changes led to improvements

- Make a decision on changes
- Standardize the changes
- Educate and train
- Monitor the process
- Repeat the cycle

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Module 4

The Fourteen Points

Fourteen Obligations of Management

- **Represent a total system**
- **Provide a roadmap for change**

The Fourteen Points

- **Point 1 - Create and publish to all employees a statement of the aims and purposes of the company or other organization.**
- **Point 2 - Learn the new philosophy, top management and everybody.**
- **Point 3 - Understand the purpose of inspection, for improvement of processes and reduction of cost.**

The Fourteen Points

- **Point 4 - End the practice of awarding business on the basis of price tag alone.**
- **Point 5 - Improve constantly and forever the system of production and service.**
- **Point 6 - Institute training for skills.**
- **Point 7 - Teach and institute leadership.**
- **Point 8 - Drive out fear. Create trust. Create a climate for innovation.**

The Fourteen Points

- **Point 9 - Optimize toward the aims and purposes of the company, the efforts of teams, groups, and staff areas.**
- **Point 10 - Eliminate exhortations for the work force.**
- **Point 11a - Eliminate numerical quotas for production. Instead, learn and institute methods for improvement.**
- **Point 11b - Eliminated M.B.O. (management by objective) Instead, learn the capabilities of processes, and how to improve them.**

The Fourteen Points

- **Point 12 - Remove barriers that rob people of pride of workmanship.**
- **Point 13 - Encourage education and self-improvement for everyone.**
- **Point 14 - Take action to accomplish the transformation.**

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Module 5

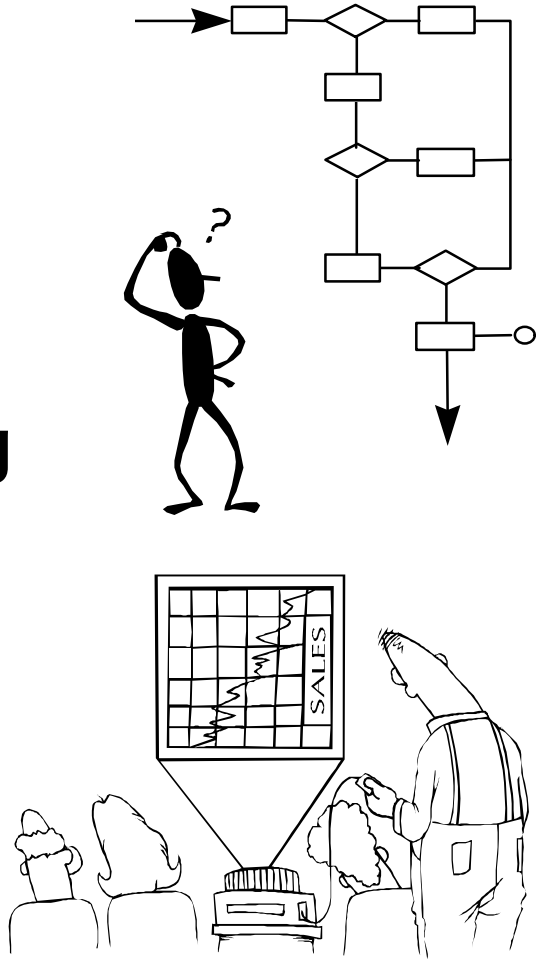
Basic Process Improvement Tools

Basic Tools for Process Improvement

- Flowcharting
- Brainstorming
- Affinity Diagram
- Cause and Effect Diagram
- Nominal Group Technique (NGT)
- Multivoting
- Check Sheet
- Pareto Chart
- Histogram
- Run Chart

Purpose of Tools

- Describe and improve processes
- Evaluate process or output variation
- Assist with decision-making
- Analyze data in a variety of ways
- Display information



Flowchart

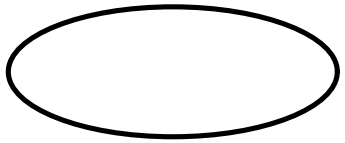
A diagram that uses graphic symbols to depict the nature and flow of the steps in a process

Benefits of Using Flowcharts

- Promotes understanding of a process
- Identifies problem areas and opportunities for process improvement
- Provides a way of training employees
- Depicts customer-supplier relationships

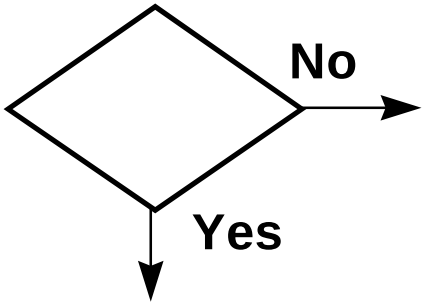
Symbols Used in Flowcharts

Start / End

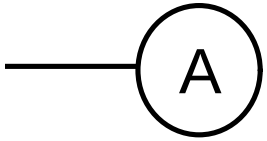


Process Step

Decision

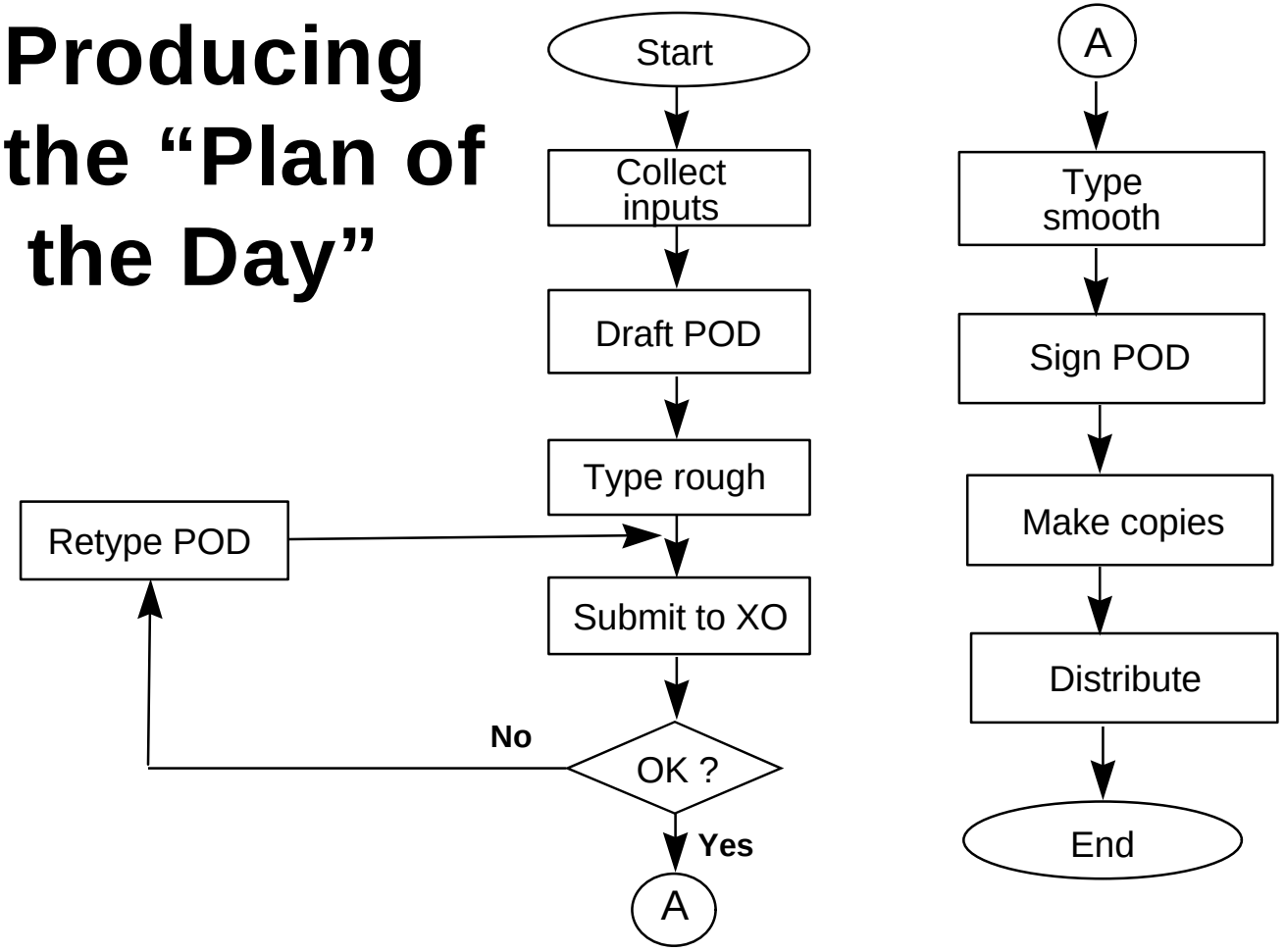


Connector



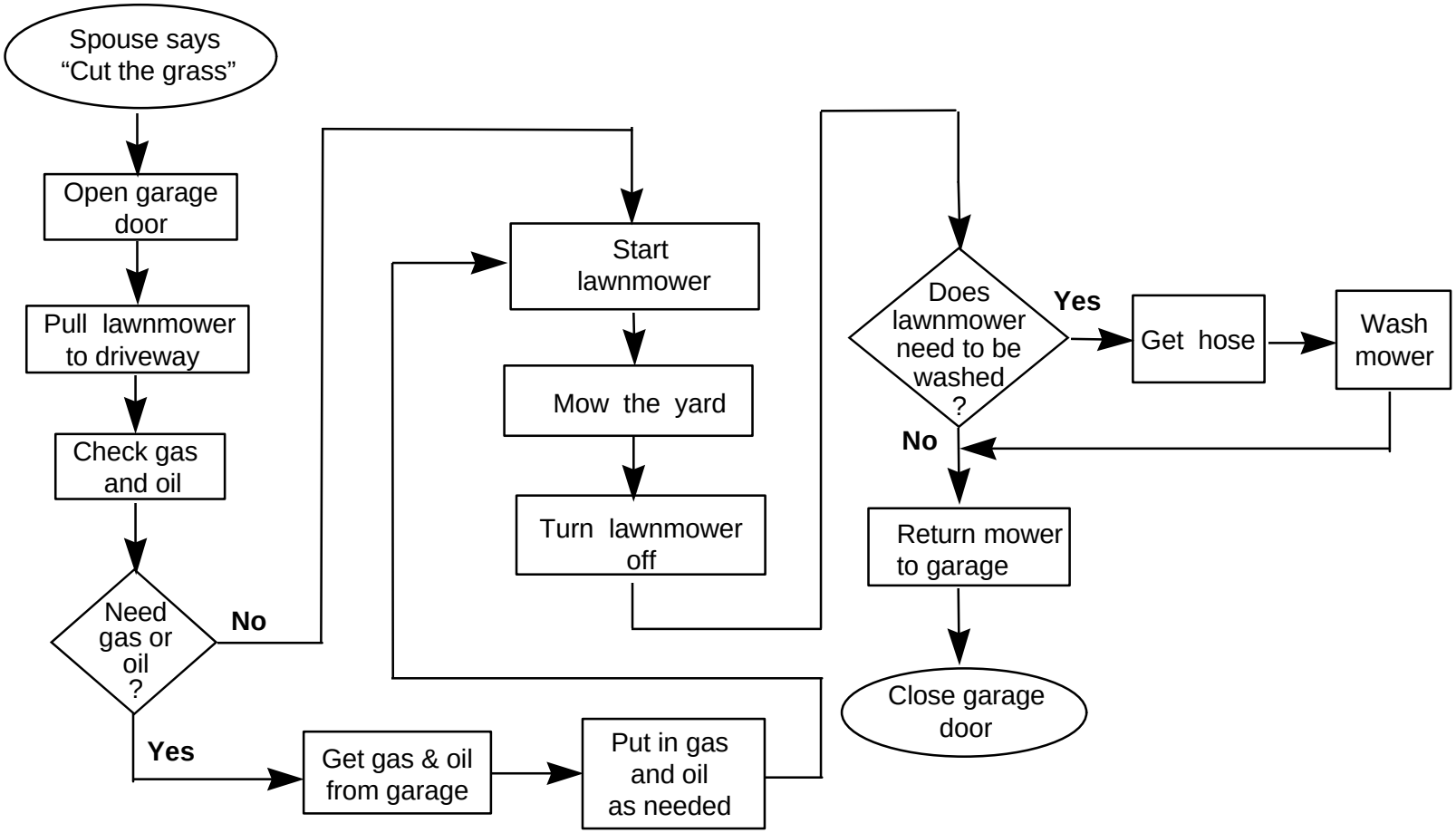
Linear Flowchart Example

Producing the “Plan of the Day”



Flowchart Example

"Cutting the Grass"



Brainstorming

An idea-generating technique used by teams to generate many ideas in a short period of time

Benefits of Brainstorming

- Rapidly produces a large number of ideas
- Encourages creativity and innovation
- Encourages involvement by all members
- Fosters a sense of ownership
- Provides input to other tools

Affinity Diagram

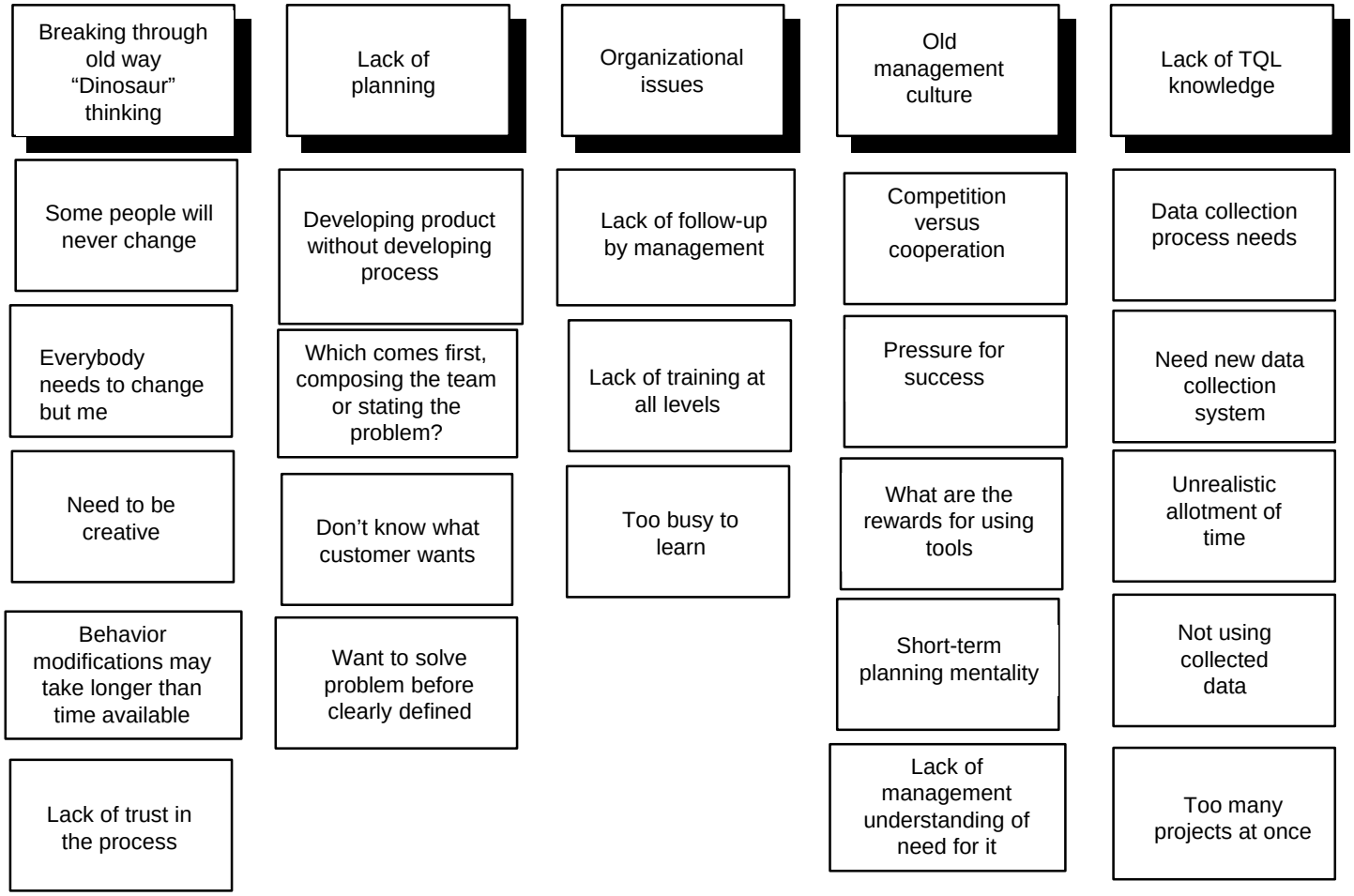
A tool that organizes large amounts of language data (ideas, opinions, issues) into groupings based on their natural relationships

Use the Affinity Process to:

- **Sift through large volumes of data**
- **Encourage new patterns of thinking**

The Finished Affinity Diagram

Issues in Implementing Continuous Process Improvement



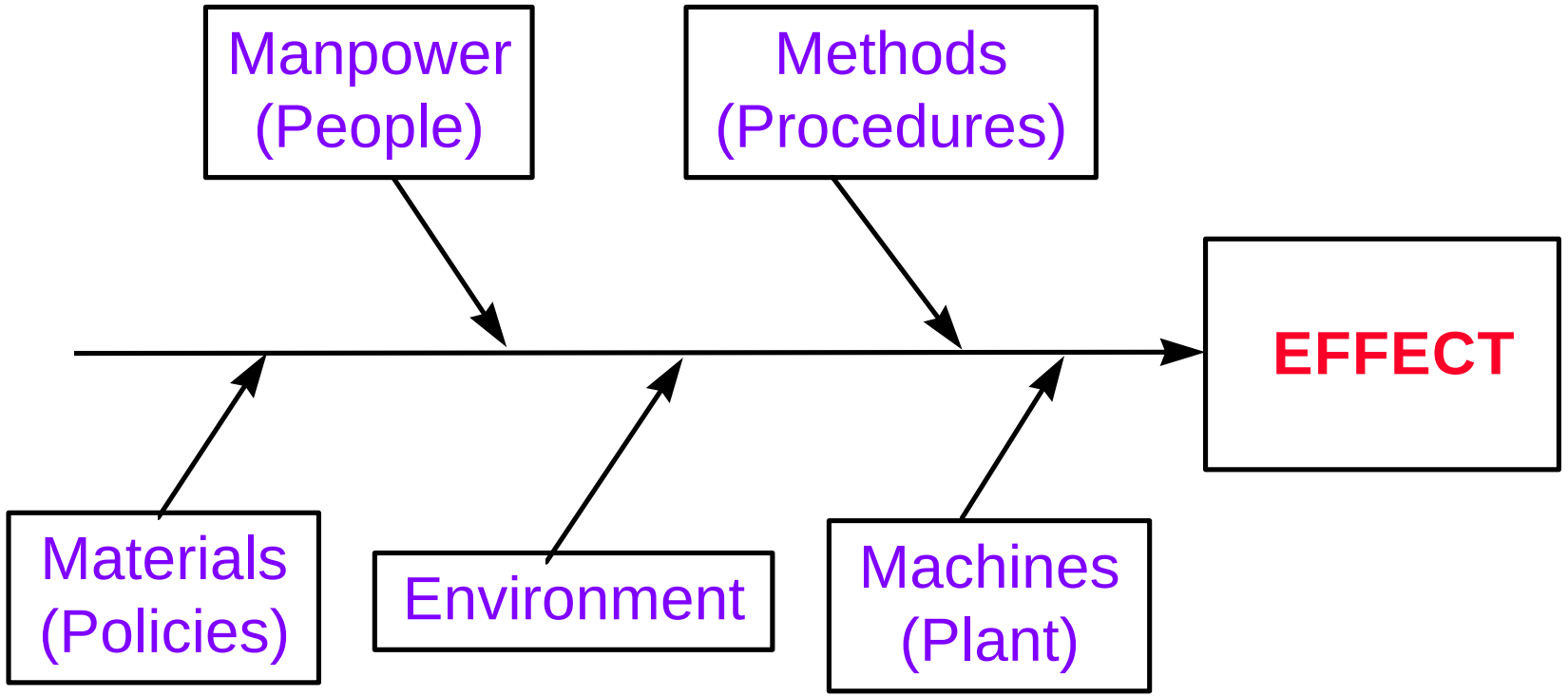
Cause and Effect Diagram

A graphic tool that helps identify, sort, and display possible causes of a problem or quality characteristic

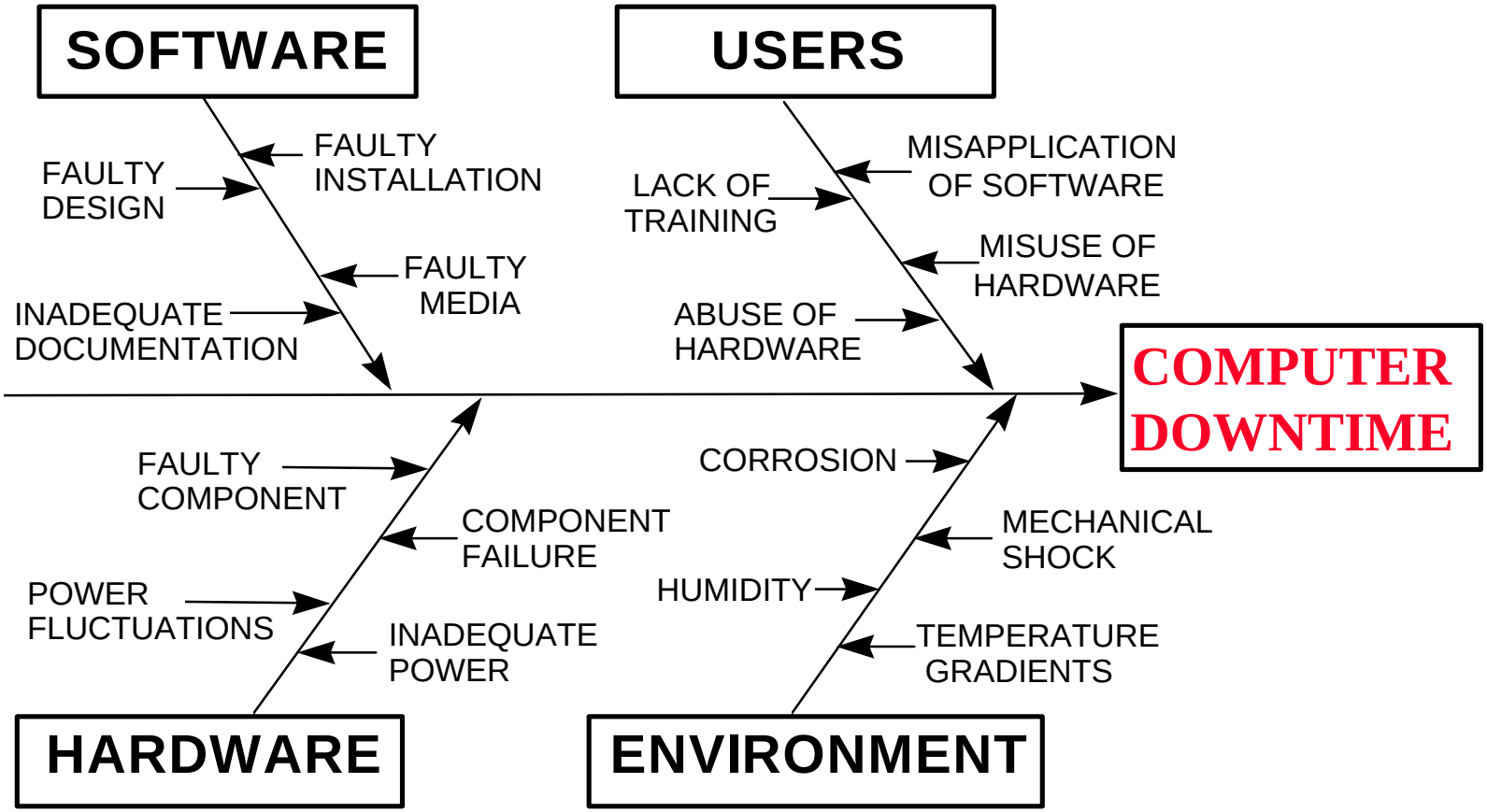
Benefits of Cause and Effect Diagrams

- Uses an orderly, easy-to-read format
- Increases knowledge of the process
- Indicates possible causes of variation
- Identifies areas for collecting data

Basic Layout of Cause and Effect Diagrams



Cause and Effect Diagram Example



Multivoting

A repetitive process used by a team to select the most important or popular items from a large list of items generated by the team

Benefits of Multivoting

- **Reduces a larger list of items**
- **Prioritizes team issues**
- **Identifies important items**

Nominal Group Technique (NGT)

A weighted ranking method that allows a group to generate and prioritize a large number of issues within a structure that gives everyone an equal voice

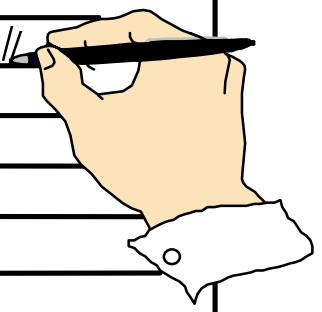
Benefits of using NGT

- **Reduces the number of issues**
- **Ensures all team members participate**
- **Rank-order issues or items by priority**
- **Allows for private input**

Checksheets

- Record data for further analysis
- Provide historical record
- Introduce data collection methods

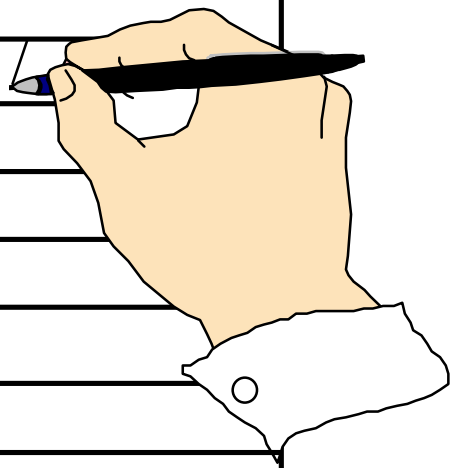
Time	New Check-ins
0500-0559	/
0600-0659	///
0700-0759	//
0800-0859	//
0900-0959	////
1000-1059	//
1100-1159	//
1200-1259	/
1300-1359	//
1400-1459	
1500-1559	/



Checksheet Example #1

Uncrating Equipment

UNCRATING (IN MINS)		TOTAL TIME (IN MINS)	
160-179	|	0550-0599	| |
180-199	| / |	0600-0649	|
200-219	/ |	0650-0699	| / |
220-239	|	0700-0749	/ / |
240-259	𝍸	0750-0799	𝍸 |
260-279	/ / / |	0800-0849	
280-299	| | |	0850-0899	/ /
300-319		0900-0949	/
320-339	|	0950-0999	| /
340-359		1000-1049	
360-379	|	1050-1099	/



LEGEND: Elapsed time (in mins) to uncrate equipment - 19 August 94 - MCBH Kaneohe Bay, Hawaii

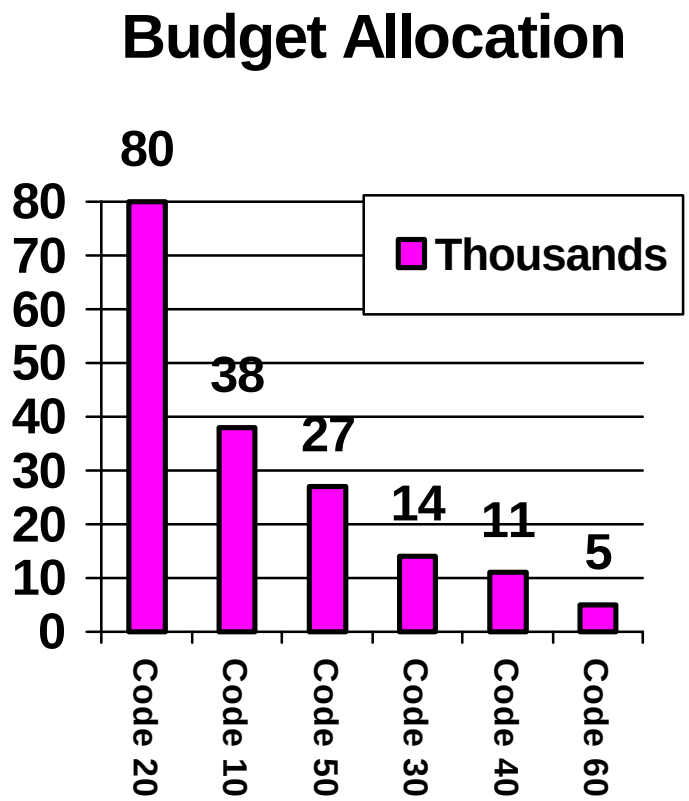
Checksheet Example #2

GEAR DEFECT DATA

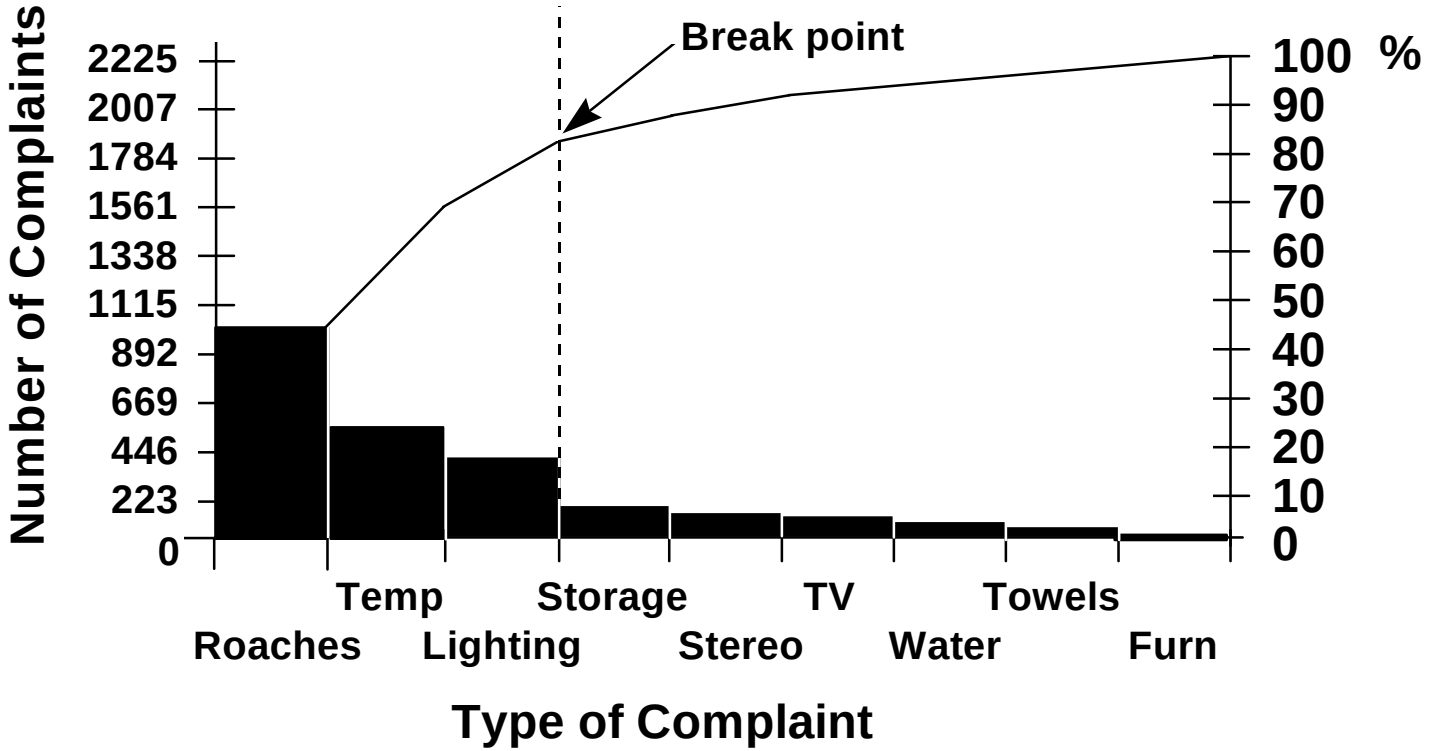
Defect Category	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	Total
I.D. Size Wrong	I			I	II					I		5
O.D. Size Wrong		I										1
Nicks		II			II	II	II		I	I	II	12
Burrs			I	I	I		I	I	I	I	II	9
Tooth Geometry	I							I				2
Blemishes	I	II		I		I		I			II	8
Other			I									1
Total	3	5	2	3	5	3	3	3	2	3	6	38

Pareto Chart

- Bar chart arranged in descending order of height from left to right
- Bars on left relatively more important than those on right
- Separates the "vital few" from the "trivial many" (Pareto Principle)

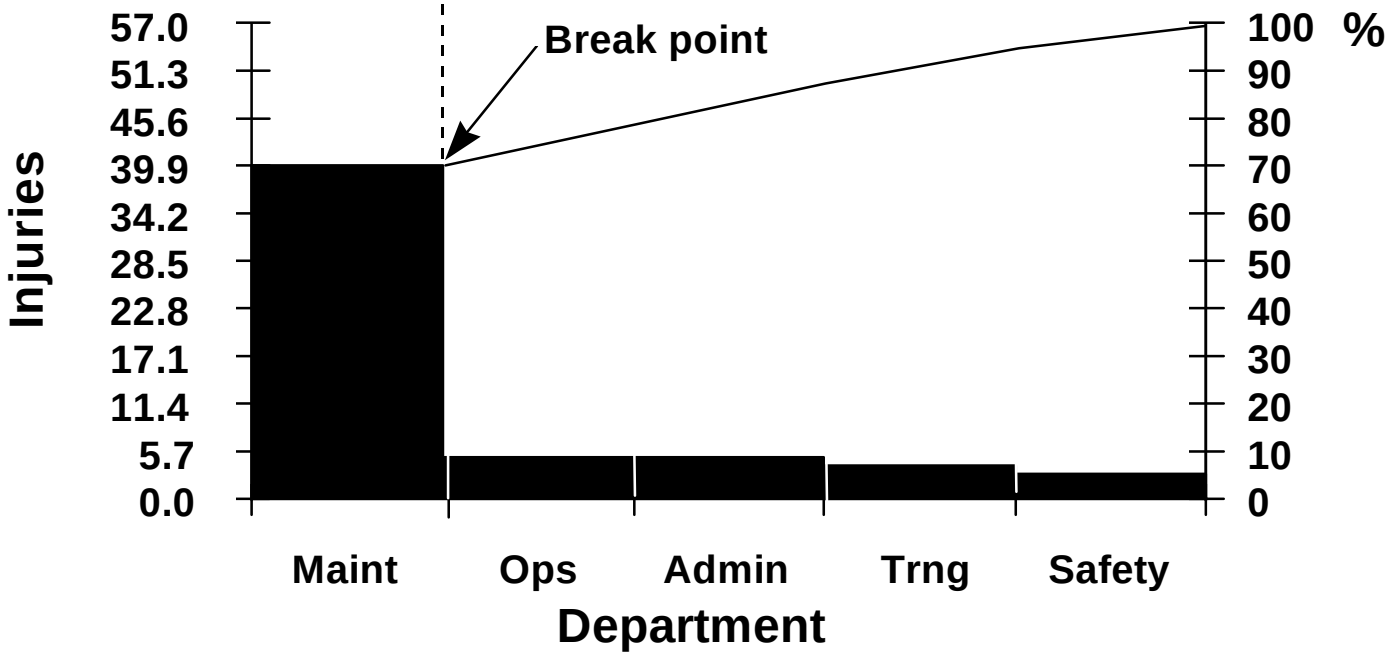


Example #1 - Pareto Chart
BEQ/BOQ Complaints



LEGEND: COMPLAINTS RECORDED IN BEQ / BOQ, 1 FEB - 30 APR 95.

Example #2 - Pareto Chart
Injuries by Department



LEGEND: INJURIES TO SQUADRON PERSONNEL 1 FEB - 30 APR 95.

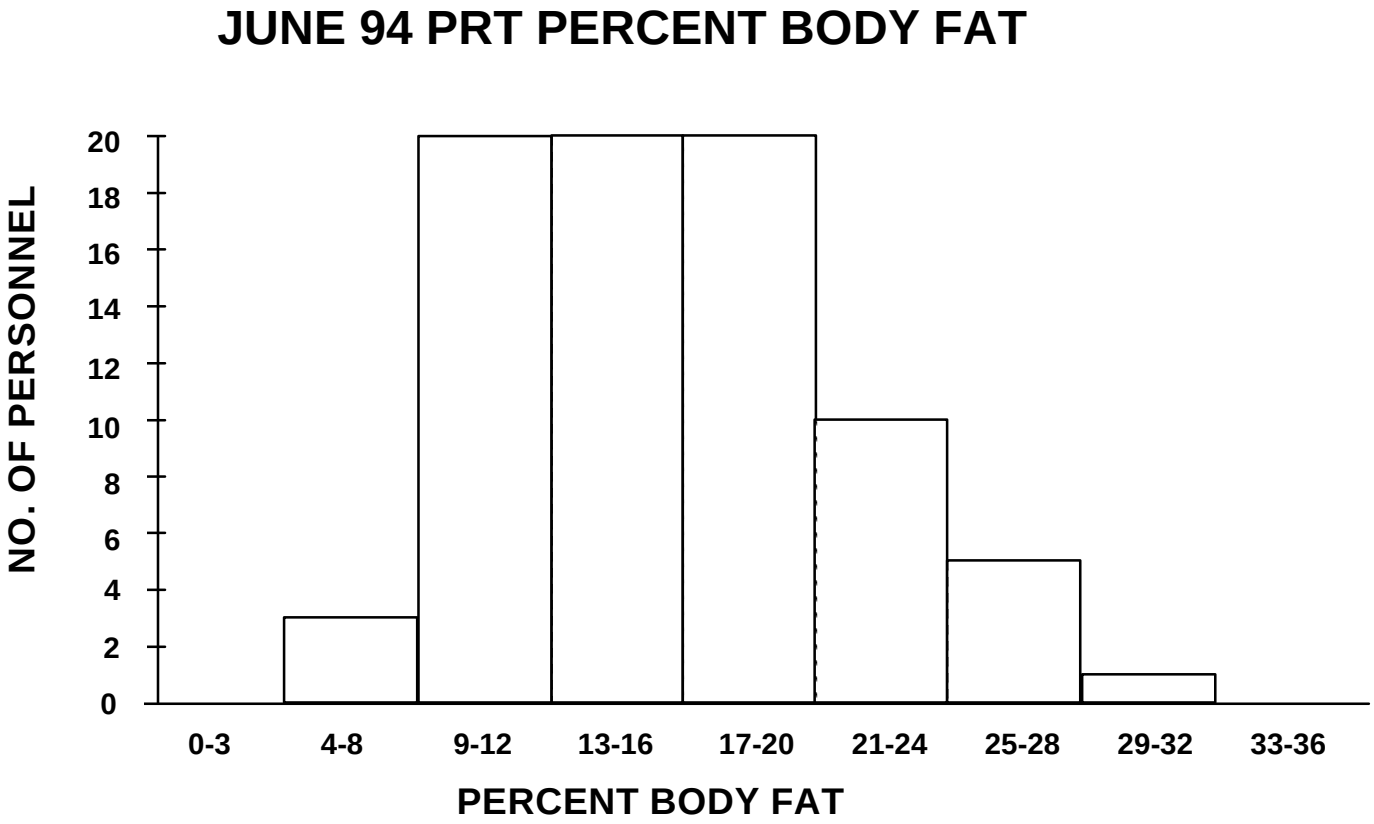
Histogram

- A bar graph that shows the distribution of data
- A snapshot of data taken from a process

When to use Histograms

- Summarize large data sets graphically
- Compare process results to specifications
- Communicate information to the team
- Assist in decision-making

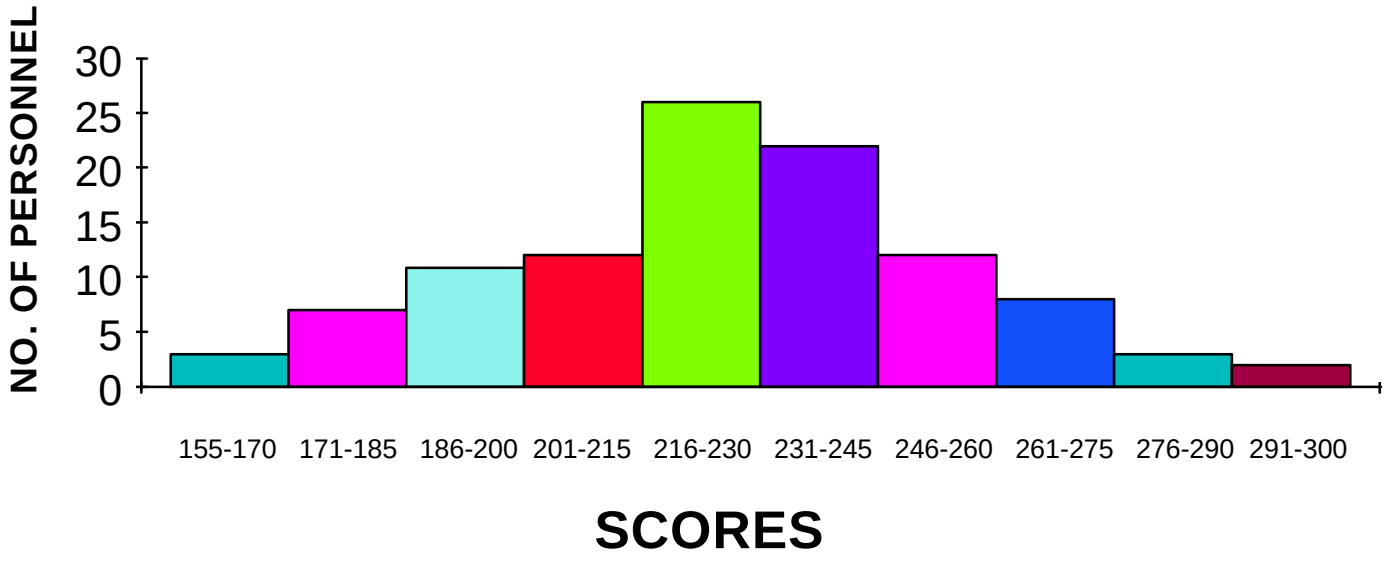
Histogram Example #1



LEGEND: USS LEADER (MSO-490), 25 JUNE 94, ALL 80 PERSONNEL SAMPLED

Histogram Example #2

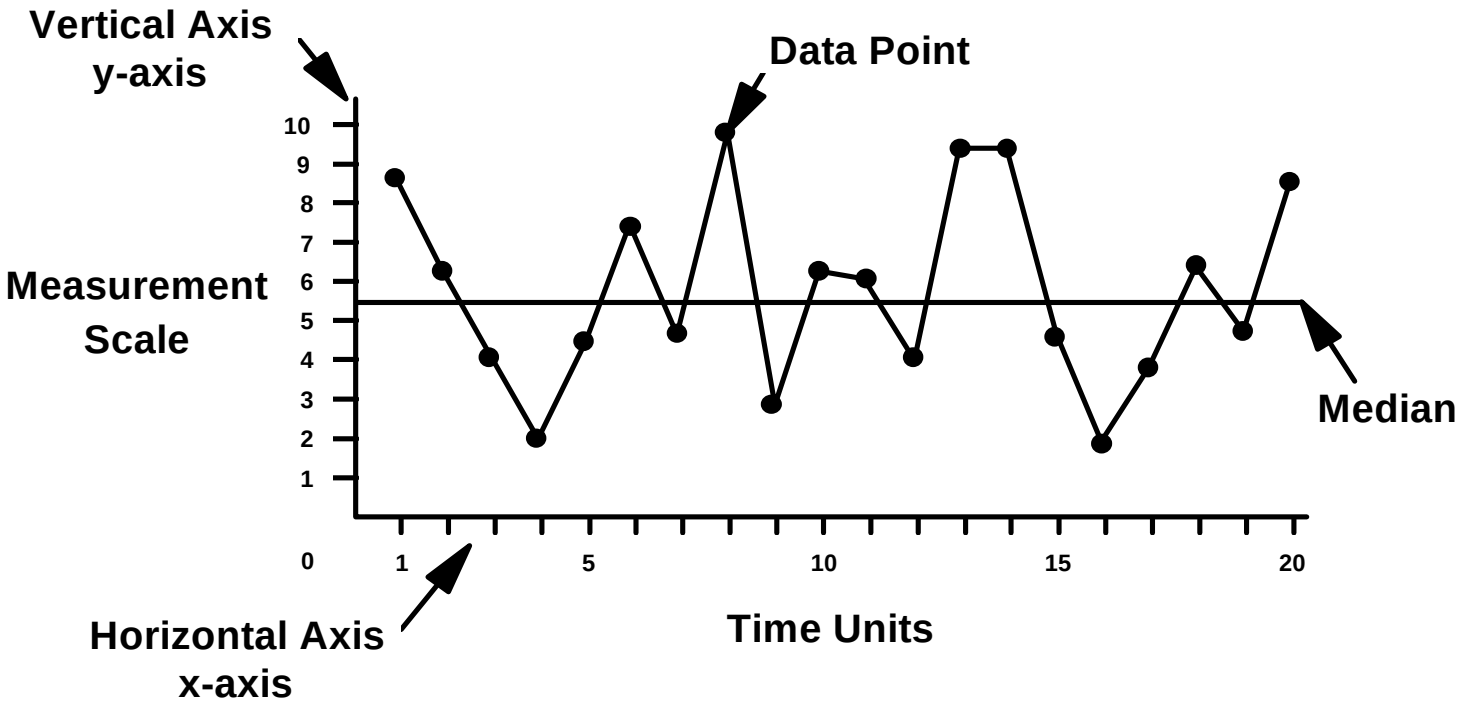
MARKSMANSHIP SCORES FOR 9mm PISTOL



LEGEND: MCBH KANEOHE BAY, HI; AVERAGE OF 4 SCORES PER CLASS, 105 CLASSES, 1 JUNE 94 - 15 JULY 94

Run Chart

A line graph of data points plotted over time



Elements of a Run Chart

Course Summary

- Module 1 - DON Quality Approach
- Module 2 - Quality Improvement Teams
- Module 3 - System of Profound Knowledge
- Module 4 - Fourteen Obligations of Management
- Module 5 - Basic Process Improvement Tools